

AMIGA USER

INTERNATIONAL

£1.95

USA \$4.50

NOVEMBER 1989

THE AMIGA IN ACTION!

AT THE PC SHOW ...
ON THE NETWORK ...
ARPING ON ...
BUILDING MODELS ...
USING ITS INTUITION ...
SPEAKING LANGUAGES ...
ACCESSING THE HARDWARE ...
CREATING ART AND
SCANNING HEARTS ...

AND MASSIVELY INTO GAMES

XENON II, SHADOW OF THE BEAST,
THE GAMES SUMMER EDITION, F16,
ASTRAROTH, OOZE, PASSING SHOT,
POPULOUS - THE PROMISED LANDS,
AND MANY, MANY MORE ...

WIN

50 SUPER
PROFESSIONAL
ZIPSTICKS AND F16
COMBAT PILOTS



HARWOODS

POWERPLAY

NEW AMIGA POWERPLAY PACKS

Yes, Gordon Harwood Computers have yet again improved the value of their legendary offers with the launch of the all new Powerplay packs which now include mega releases such as BATMAN THE MOVIE, NEW ZEALAND STORY etc. etc. And, when you look at the full list of over 20 extra items IT'S GOT TO BE THE BEST DEAL DEALIN' DIEGO, YOUR AMIGA AMIGO HAS EVER COME UP WITH! REMEMBER ALL OUR PACKS CONTAIN AMIGA'S WITH THE

FOLLOWING STANDARD FEATURES...

- ☐ 512K RAM
- ☐ 1Mb Disk Drive
- ☐ 4096 Colours
- ☐ Multi-Tasking
- ☐ Built-in Speech Synthesis
- ☐ Mouse
- ☐ 2 Operation Manuals
- ☐ Workbench 1.3
- ☐ System Disks
- ☐ Kickstart 1.3
- ☐ All Connecting Cables

ALL OUR PRICES INCLUDE VAT AND STANDARD DELIVERY SERVICE



**GORDON HARWOOD
YOUR FIRST CHOICE
FOR ANYTHING AMIGA!**

POWERPLAY PACK1

THE COMPLETE AMIGA GAMES PACK RIGHT NOW!
The NEW AMIGA POWERPLAY PACK1 now comes with OVER TWENTY ITEMS ABSOLUTELY FREE! This adds up to MORE THAN £400 SAVING

- ☐ Amiga A500 Computer (See std. features list)
- ☐ BATMAN THE MOVIE
- ☐ NEW ZEALAND STORY
- ☐ F18 INTERCEPTOR
- ☐ Buggy Boy
- ☐ Ikari Warriors
- ☐ Barbarian
- ☐ Thundercats
- ☐ Terrorpods
- ☐ Art of Chess
- ☐ Wizball
- ☐ Mercenary Compendium
- ☐ Insanity Fight
- ☐ Amegas
- ☐ Deluxe Paint II - Mega Paint Package
- ☐ Microblaster Autofire
- ☐ Microswitched Joystick
- ☐ 10 - Blank 3.5" Disks
- ☐ Disk Library Case
- ☐ Mouse Mat
- ☐ Tailored Amiga Cover

- ☐ Tutorial Disk
- ☐ TV Modulator (PACK 1 ONLY)

**SEE WHAT WE MEAN
ABOUT COMPLETE!**

You won't need to buy anything else for ages!

£399

POWERPLAY PACK2

MONITOR THIS FOR VALUE!

Pack2 contains the Super Powerplay Pack1 PLUS a stereo, high resolution, Philips CM 8833 Colour RGB/Video Monitor.

SEE THOSE GAMES, HEAR THOSE GAMES WITH ADDED CLARITY...

ONLY... £599

POWERPLAY PACK3

NEW AMIGA AND COLOUR PRINTER PACK
Take our Powerplay Pack2, and add Star's fantastic LC 10 COLOUR PRINTER, to give you the ultimate colour home entertainment computer system!!

If you would prefer an alternative printer from within our range, simply deduct £209.95 and add the price of the printer you require. (Any printer can be chosen).

**'SEE IT IN PRINT'
FOR JUST... £799**

POWERPRO PACK4

NEW POWERPRO PACK 4 CONSISTS OF...

- ☐ Amiga A500 Computer.
- ☐ Philips CM 8833 Colour Monitor.
- ☐ Star LC 10 Colour Printer.
- ☐ 'The Works' Integrated Business Software Package.
- ☐ Ten 3.5" Blank Disks in a Library Case.
- ☐ Mouse Mat.
- ☐ Dust Cover.

**'WE MEAN BUSINESS'
AT JUST... £799**

HARWOODS THE NAME YOU CAN TRUST



24R C

CREDIT TERMS

Gordon Harwood Computers are licensed brokers and facilities to pay using our Budget Account Scheme are offered on most items. APR 35.2%.

12-36 month credit sale terms are available to most adults simply phone or write and we will send written details along with an application form. (Applications are required in advance).

*** Credit terms, with or without a deposit, can be tailored to suit your needs.**

ORDERING MADE EASY - COMPARE OUR SERVICE



ORDER BY PHONE... Phone our 24hr Hotline using your Access, Visa or Lombard Charge Card quoting number and expiry date.



ORDER BY POST... Make cheques, bankers building society drafts or postal orders payable to GORDON HARWOOD COMPUTERS (N.B. Personal or business cheques require 7 days clearance from date of receipt before despatch).



PAY AT YOUR BANK... If you wish to pay by Credit Giro Transfer at your own bank, phone for details.



FREE POSTAL DELIVERY goods in UK Mainland (5-7 day delivery) OR COURIER SERVICE. Add £5 per major item for next working day delivery. UK Mainland. (Orders normally despatched on day of receipt of payment or cheque clearance).

After you've purchased from Harwoods we'll still be here to completely satisfy you should any problems arise.



12 MONTH WARRANTY... If goods prove to be faulty within 30 days of purchase they will be replaced with a NEW UNIT. For the remainder of the Guarantee Period, all warranty repairs will be made FREE OF CHARGE!

COLLECTION FACILITY... Any faulty computer or monitor can be collected from your home FREE OF CHARGE within the guarantee period. (UK Mainland Only).

FULL TESTING PROCEDURE... All computers are thoroughly tested prior to despatch, all items are supplied with mains plugs where reqd.

ERPLAY folia

MONITORS

PHILIPS CM 8833 STEREO

Full 14" Stereo High Resolution Colour Monitor, (higher spec. than the CBM 1084S now discontinued, replaced by the CBM 1084)

- Twin Speakers.
- High Contrast Tube.
- SCART Euro-connector fitted as standard.
- Green Screen Switch for enhanced text mode.
- RGB/AL, TTL, Composite Video and stereo audio inputs.
- Can also be used as a TV with tuner or VCR.
- Supplied with Tilting Stand.
- Compatible with most micros.
- FREE lead for computer of your choice.
- ONLY FROM HARWOODS... 12 Month replacement warranty for major faults.

ALL THIS FOR JUST... **£222**

COMMODORE 1084

Full 14" High Resolution Colour Monitor

- RGB/AL, TTL, composite video and audio inputs.
- Supplied with cables for A500, CGA PC, C16-64-128.
- Can also be used as a TV with tuner or VCR.

GREAT VALUE AT ONLY... **£209**

GRAPHICS HARDWARE

DIGIVIEW GOLD

Digitises static images in FULL COLOUR and all resolutions supported (memory permitting). Creates IFF and HAM files. Uses B&W, or colour with B&W mode video cameras.

£139.95
DIGI DROID
Totally automated motorised filter rotator for use with Digiview. Prevents camera movement between passes. **£59.95**

VIDEO TO RGB SPLITTER

Takes standard video signal, separates red, green and blue. Enables standard video recorder or colour camera to digitise in colour with Digiview Gold (requires clear picture pause with recorder). **£109.95**

RENDALE GENLOCKS

8802 **£249.00** Semi Pro
8806 **£749.00** Pro

SUPER PIC

Real Time Frame Grabber & Genlock. Real time instant colour frame grabber from moving video. Capture superb digitised video images in a range of resolutions from standard composite video source such as your domestic video recorder or video camera in a 50th of a sec. Includes Genlock to overlay Amiga graphics onto moving video.

only... **£499.00**
MINIGEN GENLOCK
Entry level Genlock for mixing moving video pictures with computer graphics. Ideal for titling, no monitor required.
MOVIE MAGIC... £113.85

HITACHI VIDEO CAMERA
Mono, £50 scan lines
£249.95

ILLUMINATED COPY STAND
A light, adjustable, shake free stand for video camera. **£69.95**

PRINTERS

All printers in our range are dot matrix and include the following features...
Standard centronics parallel port for direct connection to Amiga, PC's, ST, etc. and come with FREE connector cables.

CITIZEN 1200 FULL 2 YEAR WARRANTY
Very reliable low cost printer, interchangeable interfaces available for Centronics RS 232 or Serial type for CBM 64 etc **£149.95**

STAR LC10 MKII

Brand new superb MK II version of this ever popular printer **£184.95**

- Multiple font options from front panel.
- Excellent paper handling
- Simultaneous, continuous and single sheet stationery.

STAR LC10 COLOUR

Colour version of the LC 10 **£209.95**

- Allows full colour dumps from Amiga.
- Superb text quality.
- Can use black LC 10 ribbons.
- Our most popular colour printer!

STAR LC 24 10

24 Pin version of the Star LC series with exceptional letter print quality **£249.95**

All our Star printers are genuine UK spec. which are specifically manufactured for sale in the UK ONLY. Please be aware that European spec. versions are being unofficially imported against the wishes of Star Micronics UK. These printers DO NOT carry a Star UK warranty, and WILL NOT be serviced by them should the need arise. UK specification printers may be recognised by their 3-pin UK type plug which is MOULDED to the mains cable.

ACCESSORIES

COMMODORE

A 501 RAM PACK New Low Price... **£119.95**
Genuine CBM ram pack with real time battery backed clock. This add on DOES NOT invalidate Commodore's warranty.

A 500 POWER SUPPLY **£49.95**
Genuine CBM power supply, also fits CBM 128

A 520 TV MODULATOR **£19.95**

Supplied with all the necessary cables.

QUALITY ACCESSORIES

REPLACEMENT MOUSE

Microswitched mouse buttons, high resolution mechanism. **Great Feel only... £29.95**

FLOPPY DISKETTES

Genuine Commodore Disks

Ten 3.5" Commodore quality at only... **£14.95**

Quality certified 3.5" bulk disks supplied with labels

10, with a library case **£9.49**

10, uncased **£8.49**

100, uncased **£69.00**

100, with lockable storage case **£74.95**

MICROBLASTER JOYSTICK

Fully microswitched, arcade quality **£12.95**

ZIPSTICK SUPERPRO

Professional quality, perfect feel **£15.95**

STORAGE DEVICES

HARD DRIVES

COMMODORE A590 20Mb HARD DISK FOR AMIGA A500's

Commodore's own Hard Drive for the A500

- Autoboot with Kickstart 1.3
- Sockets for upto 2Mb RAM expansion
- Can be expanded in 512K blocks.
- DMA Access
- External SCSI port.

Super Low Price... **£379** (Call for Kickstart 1.3 upgrade prices)

A590 HARD DISK 512K UPGRADE

- Onboard, fit up to 4, in stages, giving 2 Mb Total.
- Up to 3Mb when fitted with A501 only **£69.95**

30 & 50Mb AMDRIVE HARD DISK FOR THE A500

- 41ms Fast access drive.
- True SCSI upto 500 kb/sec on standard A500.
- Built in power supply.
- 12 month replacement warranty included.
- 2 Year warranty available.

30 Mb Version... Only **£399**

50 Mb Version... Only **£475**

40 Mb VORTEX HARD DRIVE FOR BOTH AMIGA A500 AND A1000

- For both A500 and A1000 as supplied.
- Autoboots on any Amiga.
- Throughport and connector for 2nd hard drive.

Great value at only... **£499**

FLOPPY DRIVES

CUMANA DISK DRIVES

The drives below have the following features:

- Enable/disable switch.
- Throughport.
- LED Access Light, super quiet.
- Suitable for A500, A1000, A2000 and CBM PC1.

NEW CAX 354 3.5" SECOND DRIVE

- 25mm Super slimline 3.5" drive.

A real bargain at only... **£89.95**

CAX 1000S 5.25" SECOND DRIVE

- Amiga DOS and MS DOS compatible.

Save more than ever... **£129.95**

AMIGA SOFTWARE

THE WORKS

Integrated word processor with spelling checker, spreadsheet with graphics and database. **£79.95**

X-CAD DESIGNER

Perfect choice in Computer Aided Design (1Mb required). **£99.95**

PUBLISHERS CHOICE

Complete solution for D.T.P. needs, contains Kind Words V2 W.P. package, Pagesetter V1.2 with Artists Choice clip art and Header/footer font pack. **£89.95**

MUSIC-X

The most powerful music/midi/sequencing package available, features up to 250 tracks. **£199.95**

FANTA VISION

Popular animation and sound package. **£39.95**

DOS TO DOS

Transfer any PC MS-DOS or ST-GEM file to your Amiga. **£49.95**

24HR ORDER LINE-0773 836781



VISIT OUR SHOWROOM

Please call to see us where our full range of advertised products AND MORE is on sale. Come and see for yourself the amazing Amiga and a whole host of peripherals, software and accessories.

REMEMBER WE ARE NOT JUST ANOTHER MAIL ORDER COMPANY

All listed prices are what YOU PAY, and there are NO HIDDEN EXTRAS. VAT and Postage are included and prices are correct at time of going to press. E. & O. E.

Offers subject to availability and are currently advertised prices.



GORDON
HARWOOD
HARWOOD
Computers

GORDON HARWOOD COMPUTERS

DEPTAU1-B1, 69-71 HIGH STREET
ALFRETON, DERBYSHIRE, DE5 7DP.
Tel: 0773 836781 Fax: 0773 831040

AMIGA USER

INTERNATIONAL

NOVEMBER 1989 Volume 3 Number 11

CONSTANT FACTORS

- 5** *The Amiga Dimension: Is CGM getting it right at last?*
- 6** *News: The latest news and products*
- 64** *Competition: Your chance to win one of fifty Sonmax super Professional ZIPSTICKS and the amazing F16 Combat Pilot*
- 122** *PD: Stuart Williams talks Free Gratis...*
- 45** *Amiga Answers: Your problems solved by Yuri Large*
- 126** *Competition: WIN WIN WIN!!!*

MENTOR

- 40** *Computer Languages part II: Paul Andreas Overaa continues his conversation*
- 61** *Programming Tools part II: Code generators Intuition*
- 102** *Intuition: Gadgets part II*
- 116** *Model Building - part II: Susan Maxwell continues this interesting and informative series*

USER PORT

The Reluctant Artist: Mark Long introduces us to the Christmas Spirit!

Accessing Hardware in C: Mike Nelson dives in

FIELD REPORTS

- 28** *VDUs... How safe is yours? Nancy Picard reports*
- 34** *Amiga Art - Australian Style: Carrie Beecroft comments on some down under graphics*
- 36** *PC SHOW GUIDE: Reports and Impressions from Earls Court*
- 73** *Heard it on the Grapevine: Tony Horgan hears whispers of games to come*

TEST DRIVE

- 13** *ARP: Mark Smiddy discovers 1.4 DisOp for the Amiga*
- 10** *Aegis Soundtrax: Paul Andreas Overaa calls the tune*
- 24** *Verran Datalink: Mark Smiddy connects*
- 30** *ProWrite 2.5: Professional word processing*

- 54** *Dr. T's Music Studio: Make Music with the help of Dr. T*
- 58** *PA:SE: Speed your animation's pace with Peter Lee*
- 38** *A Joy to Hold: Tony Horgan grips his favourite sticks*
- 106** *Networking: Anthony Mael looks at an exciting new development for multiple Amigas*

SPECIAL OFFERS

- 100** *AUI Subscription Form: Beat the crush and subscribe now!*
- 105** *Fun School: The tolerant teacher for our younger enthusiasts*
- 108** *Control Centre: Protect your Amiga 500*
- 122** *AUI Covers: STOP THAT DUST!!!*

ENTERTAINMENT

- 40** *Trivial Pursuit*
- 41** *3D Pool*
- 50** *The Games: Summer Edition*
- 64** *Daily Double Horse Racing*
- 66** *OOZE*
- 70** *Twilights Ransom*
- 76** *Passing Shot*
- 77** *Mr Heli*
- 78** *Dynamite Dux*
- 80** *Populous: The Promised Lands*
- 85** *F-16 Flight Simulator*
- 90** *Xenon II*
- 92** *Charts*
- 94** *Astaroth*
- 96** *Shadow of the Beast*
- 113** *Red Lightning*

AMIGA USER INTERNATIONAL

Managing Editor and Publisher

Antony Jacobson

Editorial Co-ordinator

Mark Smiddy

Staff Writer

Tony Horgan

Editorial Assistants

Simon Power

Carrie Beecroft

Consultant Art Editor

Graham Baldock

Assistant Art Editor

Janice Cook

Production Co-ordinator

Lucy Szachnowski

Advertisement Director

Andrew Bishop

Advertisement Manager

Billy Brown

Senior Advertisement Executive

Paul Clements

Financial Director

B.J. Lewis M.Sc. F.C.A.

AUI CONTRIBUTORS

Andy Moss, Anthony Mael, Kati Hamza, Len Keighley, Mark Long, Mike Nelson, Nancy Picard, Nigel Streeter, Paul Andreas Overaa, Paul Rigby, Peter Lee, Sharon Long, Stuart Williams, Susan Maxwell, Yuri Large

Telephone 01-278 0333

Editorial ext: 274

Advertising ext: 288/280

Subscription ext: 260

Published by

Croftward Limited

Finsbury Business Centre

40 Bowling Green Lane

London EC1R 0NE

Distributed by Comag,

Tavistock Road, West Drayton,

Middx UB7 7QE

Typeset by Afterimage

Printed by Chase Printers Group

Amiga User International - an independent magazine for Commodore computer users - is not connected in any way with Commodore Business Machines UK Ltd. It is published 12 times per year by Croftward Limited. The publishers do not accept liability for any incorrect statement or errors contained in material from independent sources or authors which may be reproduced from time to time.

© Croftward Limited 1989

THE AMIGA DIMENSION

Commodore's career, like that of many international companies, seems to run in cycles. It is never all conquering for long nor is disaster total. It goes on the upswing in one area only to find the downward path somewhere else. A few years ago while the Amiga 1000 was struggling in the UK and the rest of Europe, Commodore established a solid user base for it in the U.S. In more recent times, it has been first West Germany and now the U.K. that have led the Amiga upward to public awareness and market success with the A500 while the U.S.A. has drifted down through a lack of A2000 sales.

The confident looks on the faces of CBM UK Managing Director Steve Franklin and his people at the Personal Computer Show, reported in this *AUI*, left no doubt that on this side of the Atlantic, Commodore today sees itself forging ahead especially with the Amiga and its PCs. It was with visible satisfaction Franklin announced "This Christmas we will take the personal computer market!"

The enormous - the largest they have ever had - and remarkably well-equipped Stand that CBM mounted at the Show was thronged by admirers from the general public and those who have business associations with Commodore. The overall feeling expressed was that in the two and a half years since Steve Franklin took over the job an astonishing transformation has taken place and substantial progress achieved.

I encountered one important dealer who told me he was finding the Amiga outselling the rival Atari ST by 5 to 1 both in hardware and software. A major software company told me that it had released a product on the ST and three months later on the Amiga. Even with the ST's three month advantage, the Amiga had almost caught up in sales. And there were many other stories of similar success.

While the rivalry between Commodore and Atari may not really be of great significance to users, the advance of the Amiga, even in the UK where the ST had a long lead on sales, will have a helpful effect. For Amiga users will benefit if the Amiga becomes more widely popular, because more software development companies will see the Commodore 68000 computer as a natural format for which to create. It also means that for hardware add ons, suppliers can produce more cheaply with increased numbers of potential buyers. It also permits Commodore to extend its business and support for users and spend more on research and development for the next generation of machines.

However, as Europe, especially the UK, has felt the impact of Commodore's growing popularity, the USA has over

the last year or so, in the Amiga field, made little progress. Amiga sales have slowed and development of new products fallen sharply. This was reflected at the recent Chicago AmiExpo where very few stands, only half a dozen or so, were occupied by companies who had been represented at the first AmiExpo in New York, just over 18 months before. Many of the original developers, concerned at the falling market, had deserted to MSDOS or Apple Macintosh which seemed to offer better prospects.

The problems Commodore faces for the Amiga in the U.S. are different from its business challenges in Europe and elsewhere. In the U.S.A., the PC is king. The biggest share of the home computer market is dominated by MSDOS, the machines for which are cheap, easily obtained and supported and widely understood. At the higher end, the Apple Macintosh has virtually cornered the DTP field. The A500, which has been CBM's winner in other countries, is hardly seen and the A2000, to which CBM looked for its major success, has been mainly popular only in 'niche' markets such as video studios.

However nothing remains the same in the Commodore world for very long ... Now, it seems that CBM is planning to fight itself out of difficulty with the A500. We hear that there will be, up to the end of the year, an estimated \$16 million (about £10 million) spent advertising the A500 across the U.S.A. It will also, in addition to the independent dealer network, be sold through a major chain of 350 stores, Connecting Point, and even soon appear in the famous Sears Roebuck mail order catalogue. A number of other substantial promotions should also support the campaign to bring the A500 to mass popularity.

Does all this matter to the non-U.S. Amiga user? Well, Commodore certainly needs a strong home, U.S.A. market; not only for financial but also for psychological reasons. The major technical development on the Amiga by Commodore takes place there as do the most important corporate decisions. And, except in the pure entertainment field, the most significant software and hardware products generally emerge from U.S. developers. They too need the reassuring confidence of success in a buoyant market on their own doorstep.

At last, it appears that CBM is moving in the right direction in the U.S.A. and elsewhere at the same time. Perhaps the business cycle will, finally, turn CBM's way around the world. If that happens, it should be good news not just for Commodore and its shareholders but for all of us involved in the Amiga dimension everywhere.

Antony Jacobson

Managing Editor and Publisher

ADVERTISERS DIRECTORY

16 Bit Centre	55
17 Bit Software	112
Advanced Electronics	98
Amiga Systems	15
Amiga Users Group	121
Anco Software	93
Applied Research	125
Applied Visions (UK)	55
Ashcom	112
Athene Consultants	Notepad

Bytes + Pieces	16,52
Calco Software	101
Cotswold Computers	Notepad
Compost	57

Datel Electronics	42-43
Delta Pi	120
Diamond Computer Syst	82,83,84
Digicom	49
Digipro	9,65
Discount Disk	Notepad
Disc Company	18-19

Evesham Micros	47
Elec. Maint.	Notepad
Elec. PD	Notepad

First Micro	44
Frontier Software	Notepad

GTI	32
George Thompson	
Services/M.A.S.T.	26,27

H.B. Marketing	IBC,33
H.S.V.	117
Hammersoft	121
Harwood Computers	IFC/3
Hobbyte	109
Homebased Business	Notepad

JEM European	17
--------------	----

Magnetic Media	103
Megaland	88-89
Memory Exapansion Systems	38
Merlin Express	100
Microbotics	68-69

Newtek Inc.	OBC
-------------	-----

Once Bytten	127
-------------	-----

Pageplay	127
Purple PD	109

Ramsoft	103
---------	-----

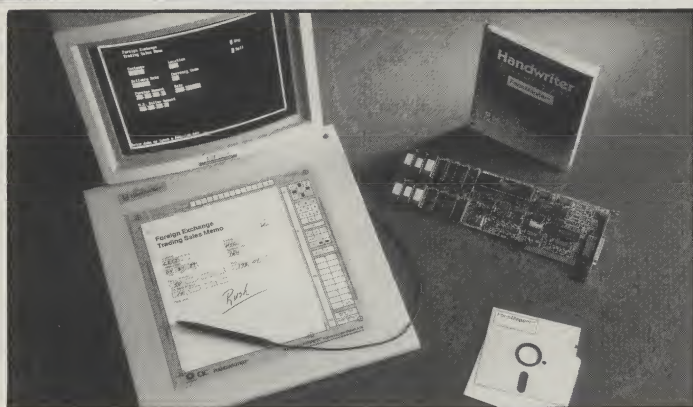
Sabre 16	111,117
Silica Distribution	95
Soft Machine	109
Softville P.D. Services	123
Sublogic	60

Treble H Computing	49
Trilogic	101
Turtlesoft	79

Wizard	125
WTS Electronics	Notepad

Xenon Tech,	63
XZ Comp.	109

Whilst all reasonable precaution is taken to ensure advertisers are bona fide, Croftward Publishing Group takes no responsibility for any misrepresentation or inaccuracies in advertisements or for any breaches of obligations by advertisers. Readers are recommended to take appropriate professional advice before entering into obligations.



Why Use a Keyboard When You Can Write

Learning to type, with the added disadvantage of trying to remember all those different functions, what they do and how to initiate them puts a lot of users off buying a computer and software. **BUT NO MORE.**

With a WRITE-ON system from Graf Systems and your software package, you can combine the functions of keyboard, mouse and other

input devices into one, and, the company says, work faster and more comfortably as well. WRITE-ON offers the user: An all-in-one input system, Template display software structure, User definable "Softkeys", Pen touch icons, User definable character macros, Greater speed for beginners and occasional users alike.

Fantasvision

Following the signing of an agreement between Domark and Broderbund, Domark is now the UK supplier for Fantasvision, an animation program, already reviewed in AUI.

With Fantasvision, you create any two objects or creatures in separate frames. The program then generates up to 64 'in between' frames to make your first drawing turn smoothly into the second. For in-

stance, you can draw an aeroplane in the sky, then in another frame draw it on the ground, watch as the plane glides in smoothly for a three-point landing. This animation technique is known as 'tweening' and replaces the frame-by-frame process that professional animators normally use.

Price: £39.99. Available for Amiga and IBM PCs and compatibles.

TV*TEXT Professional

TV*TEXT Professional is a package for lettering and graphics for video titling and desktop presentations. TV*TEXT Professional renders text, shapes, and objects in any number of colourful styles. Its full IFF image compatibility means TV*TEXT Professional can be used with a wide variety of graphics and animation programs, including TV*SHOW special effects

slide show program.

It outlines, shadows, metallics, strobes, edges, extrusions (3D) and also offers colour animated glows, glints, sheens, and cycles.

Price: \$149.95 (US). Includes Zuma Fonts Volumes 1,2&3. Contact: Zuma Group, 6733 N. Black Canyon Hwy, Phoenix, AZ 85015, (USA). Tel: (602) 246-4238.

"Speaking of Technology"

Graf Systems has introduced what they claim is the world's first portable transactions Voice Computer with VOICE I/O, bar code, and keyboard input" ... all in a 34 ounce handheld unit.

The compact system, provides the user with the full features of a desktop system, yet with the added versatility of the voice recognition and synthesis, anti bar-code.

The data acquisition system, features voice recognition for up to 5 user's with

ary includes alphanumeric characters (36 words) plus Enter, Up, Down, Left, Right, Shift Mode, Space Bar, yes, No, Voice Output, Stop Listening and Attention (50 words total). An isolated word/phrase recogniser with a capability of 250 words or phrases produces up to 1,000 keystrokes per spoken word.

The device must first learn to recognise each user's voice. The user repeats each of the words (up to 250 total) that have been tailored to the users ap-



250 words each, and unlimited text-to-speech voice output. It also contains a large visual display with 16 lines by 21 characters. The computer is functionally equivalent to an IBM XT with 1MByte of RAM, yet the entire system is contained in a package approximately 9 1/2 inches long, 2 1/2 inches high and 4 inches wide.

Most popular programs, including a user defined custom vocabulary, are downloadable from any standard desktop PC, then the system can interface into any standard application such as Dbase, Symphony etc.

The units basic vocabul-

plication. When completed, each user attaches his/her initials to the vocabulary file for the later retrieval. A once only training program is said to take about twenty minutes, depending on the size of the vocabulary.

By combining voice output for prompting and/or verification, for each entry, approximately 50 words per minute can be spoken.

Units are currently being sold for shipping and receiving stock, inventory and quality control, warranty inspection, appraisal servicing, and vital sign data collection by nurses. These are some of the many applications for this system is capable of achieving.

POCKET ETHERNET ADAPTOR

Networking pioneer Corvus Systems announced today that it is to market its pocket Ethernet adaptor for lap top and portable computers in the UK.

The Corvus Pocket Ethernet adaptor can be used to connect any IBM or compatible PC to an Ethernet network, and comes in the form of a small box (5.15" x 2.45" x 0.85" overall, including connectors), weighing 5oz — which is plugged into the parallel port of a PC.

The Ethernet adaptor has already received favourable reviews in the US magazine Infoworld and Corvus European Managing Director Mark Lewis believes the product will be equally successful in Europe.

"As far as I know", says Lewis, "we don't have much competition at the moment.

There are, of course, other EtherNet adaptors, but they seem to be more "rucksack" than "pocket"; they're more expensive; and you get stuck with having to buy an EtherNet card as an extra instead of getting it as part of the package."

As its name suggests, the Corvus Pocket Ethernet adaptor is "portable" in the true sense of the word. The product is self-contained and requires no expansion slot in the PC. Installation is simplicity itself — "You don't even have to take the cover off the PC."

The Corvus Pocket Ethernet adaptor, complete with EtherNet card, will retail in the UK at £495 and is available from authorised Corvus dealers.

Contact: Corvus.
Tel: 0635 580300

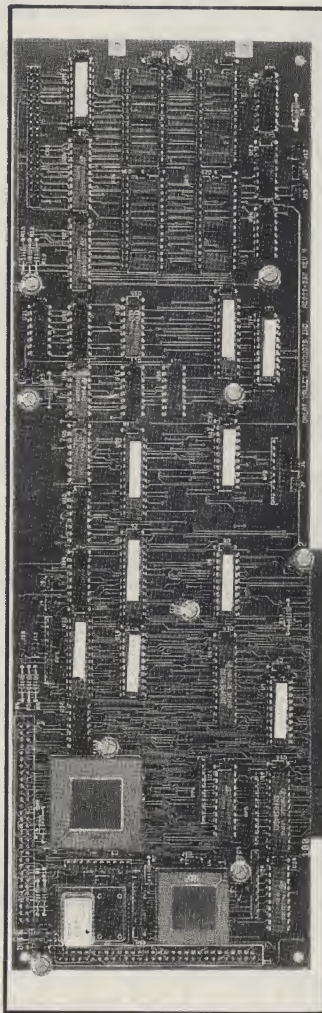
GVP 68030 Accelerator for Amiga 2000

Power Computing Ltd (UK distributors for Great Valley Products) has announced the availability of the new 68030 25mhz accelerator board for the Amiga 2000.

Aimed at the serious user, this board takes the Amiga into power micro class and speeds up considerably heavy weight graphics applications such as Sculpt 4D, Power tell AUI.

As standard, the board comes equipped with 68882 Co Processor and 4MB of 32bit 0 wait state nibble ram. The board can be upgraded using SIMMS to a maximum of 8MB. The 68030 board also features a high speed AT type hard disk interface.

Prices: £2,500 (+ VAT) for a system with 80MB Quantum AT hard disk; and £1,737 (+ VAT) without a hard disk.



The SANG Transputer Board

The SANG transputer board for the Commodore Amiga 2000 or an AT compatible computer now being released, requires an 8 bit PC slot and a Zorro 16 bit slot (Amiga 2000) at the AT height of 114mm. The basic transputer configuration includes one T800 and 1 MB ram which is expandable to four T800 and 16 MB ram.

The outstanding conceptual improvement in transputer design is their ability to perform parallel processing. Fast instructions for process switching on a single transputer can be combined with communication and synchronization of processes on different transputers, Digital Animations, the creators tell AUI.

Each transputer provides the capacity for parallel processing in and of itself. On a fully configured board containing 4 transputers, each transputer has 1 link routed directly to each of its 3 counterparts and 1 link routed to an external connector. These links provide high speed communication channels

(typical data rate of 20 megabits/second) running independently of the processor and the floating point unit.

In combination with a supporting 'harness' program consisting of a multiplex, a demultiplex and a flood-fill process, the four transputers act as a single transputer with performance 4 times greater than a single transputer operating alone.

Furthermore an "unlimited" number of boards can be cascaded via the transputer links, or connected to other compatible boards having a linker interface such as the video graphics transputer or the SANG parallel memory board.

For special purposes it is also possible to construct systems with hybrid structures such as pipelines or trees. Message routing algorithms can be developed for use in large networks.

Contact: Digital Animation Productions, 79 Mt. Vernon St., Boston, MA 02108 (USA).

Tel: (617) 720-2038.

MSII Scanner

The MS II is an automatic 50 page sheet feeding scanner with 300 dpi. With its fixed CCD lens it can scan an A4 page in 9.9 seconds; and it also provides extremely high accuracy, its creators claim. Omnipage, OCR software, is being bundled free of charge. The

MS II like all the Microtek range of scanners is compatible with the IBM PC and PS/2.

Price: £2048. Contact: Katakana, Manhattan House, Bridge Road, Maidenhead, Berkshire, England SL6 8DB. Tel: (0628) 75641.

Prodata

ARNOR launch database. Arnor, the makers of Protex, have announced the release of Prodata, a database management program for the IBM PC and Commodore Amiga.

Prodata's features include Protex-like editing, selection of records by filtering, powerful printing options (like Protex), im-

port and export, password protection, file management screen, background printing, macros, compatibility with foreign languages, multiple indexes.

Prodata is being introduced at a special price of £55 until the end of November 1989, when the price will rise to £79.95. Contact: Arnor Ltd, 611 Lincoln Road, Peterborough, PE1 3HA. Tel: (0733) 68909.

Amiga Font Packages

New Horizons Software has announced ProFonts Volumes I and II for the Amiga computer.

New Horizons ProFonts packages contain high quality fonts for use with their word processor,

less, president of New Horizons Software. He also noted, with a high resolution printer, such as a 24 pin or laser printer, those fonts produce excellent results.

Both ProFonts packages include "System Mover," a

ProFonts I:

Beryl This is a sample of the Beryl font.
 Coal This is a sample of the Coal font.
 Gold This is a sample of the Gold font.
 Granite This is a sample of the Granite font.
 Marble This is a sample of the Marble font.

ProFonts II:

Bone Broadway Cinnabar Corundum
 Feldspar Galena GRAPHITE
 Gravel Jade LED Mica
 Oblique Obsidian OLIVINE Park Avenue Sand
 Script Serpentine Silicon SERPENTINE Spinel
 Steel Stencil Talc Tiffany

ProWrite. The fonts contained in Volume I are suitable for correspondence and reports. Volume II contains fonts of a more decorative nature. Both ProFonts packages can be used with other programs that can utilize Amiga fonts, including Deluxe Paint II, PageSetter, and Notepad.

"The fonts in the ProFonts packages were designed specifically for word processing and desk top publishing using dot matrix printers," said James Bay-

utility for moving fonts and other system files from one disk to another. Using System Mover simplifies the installation of fonts on Workbench disks; the user simply chooses the font or fonts to be installed and the program automatically handles changing and updating the appropriate files.

Price: \$34.95 each (US).

Contact New Horizons Software, Inc., PO Box 43167, Austin, TX 78745 (USA)
 Tel: (512) 328-6650.

Flexible keyboard

The Memory Pro keyboard from EECO is said to be a fully programmable IBM compatible device based on the industry standard 102 key layout.

However, there are 32 extra programmable keys, 21 of which can be re-legended because they have clear plastic keytops. Ten of these are grouped to the left of the QWERTY bank.

The keyboard includes 2k of EEPROM and this allows up to 60 macros to be stored. These can be stored on any key and at

any of four levels. These macros can have delays and variable fields built in.

EECO says any key can be remapped to any other location and that custom layouts can be uploaded to host memory using a utilities program supplied with the keyboard.

The keyboard is said to be compatible with IBM PCs and the PS/2 range, offering ASCII and RS232/422 options. There are selectable baud rates and programmable click and repeat rates.

Numbers Up

Mindscape International recently released an up-graded version of its popular Lotus-compatible spreadsheet Numbers Up in order to coincide with the release of 1-2-3 Version 3.0, the company tells us.

By loading Lotus 1-2-3 (or VP Planner) worksheets into Numbers Up, uses can instantly access data from those worksheets, for example to insert a block of cells into a management report or revised price information into a product database. Calculations can also be done on the fly, for example to insert a price quotation into a letter or sales targets into a memo. In all instances, Numbers Up automatically reformats the data to fit the target application.

With Numbers Up, it is now possible to effective-

ly work with two Lotus spreadsheets simultaneously, cutting and pasting data between the Numbers Up and Lotus worksheets with less than half-a-dozen keystrokes. Mindscape tell us.

Using just 12K RAM, Numbers Up can handle worksheets up to 64x999 on any PC, XT, AT, or PS/2 compatible, standalone or networked, with 256K RAM and DOS 2.0 or later. Numbers Up will take advantage of LIM EMS for memory swapping instead of disk if installed. The program supports the TesSeRact Standard for Ram-Resident Program Communication.

Contact: Mindscape, PO Box 1019, Lewes, East Sussex, BN8 4DW.

Numbers Up will be released in mid August, with a recommended retail price of £49.99 inc VAT.

Shufflepuck Cafe

Play air hockey with the scum of the galaxy at the Shufflepuck Cafe - the latest exciting release from Domark and Broderbund.

It's late and you need a phone. There's not a lot of choice. Stumbling into a dingy entrance you enter the sleaziest dive in the galaxy. All that lies between you and the phone are 8 alien misfits, an obsolete

droid and a few 'friendly' games of Shufflepuck.

Well, maybe not so friendly. You've stumbled into the galaxy's last den of air hockey enthusiasts. And these goons take their Shufflepuck seriously!

Shufflepuck Cafe for Amiga, will cost £19.99.

Further information
 Tel: 01-780 2222.

Green link to Australia

A network providing peace and environmental activists with an electronic information system has set up a branch in Australia.

London-based Breenet, founded in 1985 to give professional computer communications to peace groups, added the seventh branch to its international network.

The organisation already has branches in the US, Canada, Brazil, Nicaragua and Sweden and aims to have more European nodes up in the next year, according to Greenet technical

director Jeremy Mortimer.

Mortimer said Greenet now runs more than 500 electronic conferences on all topics of interest to peace, environmental and human rights groups.

Greenet is an independent organisation, funded from charitable trusts and its own earnings which come from its email and conferencing system, in which different conferences are moderated by groups such as the Action Group on Chemical Weapons and Oxfam.

ANI-
Magic

THE VIDEO SPECIALISTS

Finance
Available
Now!!

£69.95

BOOK NOW!
For our next
Video & Graphics
Weekend Course

Platinum Works!	£179.00
Publishers' Choice	£ 99.00
Professional Page	£199.95
Pagestream	£199.95

A590

with 2MB RAM
ONLY £599.00

Superpic	£569.00
HP PaintJet	£899.99
DeskJet	£579.00
Star LC24-10	£299.95

DIGIPRO LIMITED
0703 703030 - 01 905 1030

Enterprise House, Howards Grove,
Southampton SO1 5PR
All Prices Include VAT

Orders over £50 Postage & Packing Free
Add £1.00 Postage & Packing for all other orders
Please phone for prices
outside the U.K.

DIGIPRO

Pro Video Plus £249.95
Video Effects 3D £159.95
Photon Paint 2 £79.95
Deluxe Paint III £79.95
DigiPaint 3 £79.95

Phone

0703 703030
01 905 1030

Amiga 2000 XT HD System
from only £16.29 pw lease-hire
A500 Starter Packs
from only £3.77 pw hire-purchase
Written details on request

**Call for your
Free Video
info pack!**

Genlocks

8802, 8806, NERIKI
MAGNI, MINIGEN
and the long-awaited G2

2MB RAM for the
A590 for ONLY... **£240.00**

Authorised Commodore Amiga Dealer

Export, Government, MOD and Educational Orders Welcome
Hire-purchase and leasing finance available. Digipro are licensed credit brokers.

PC-ALBUM

Freehand, the Surrey based Computer Graphics Systems company has announced the release of PC Album, a full colour integrated image database package. PC Album is a full colour image database incorporating database management with image processing technology, Freehand tell us.

The PC Album allows all

stored on an optical WORM drive and using the new Starlite image compression board available from Freehand, images can be compressed at a ratio of up to 40:1 without any noticeable degradation in image quality, the company claim.

An uncompressed full screen, full colour image which normally occupies over 300 Kbytes can be compressed down to just

PERSONNEL DATABASE	
Department	Marketing
Job Title	TelSales Supervisor
Last Name	Dando
First Name	Gabrielle
Title	Miss
N.I. Number	123 45 6789
Start Date	12/88/89
Salary	14,500.00
Rate Effective	12/88/89
Address	Largewood Oaklands Lane Cranleigh
County	Surrey GU6 8SS
Home Telephone	2970000
Insurance Coverage S (F.S.)	Insurance Amount 29 * 1000 = 29,000



users to capture full colour images (with 32,768 colours on screen simultaneously) through a video camera or colour scanner and incorporate these images along with traditional textual database information. Freehand describe this software as applying to a wide variety of applications:- Security Identification, Personnel Records, Estate Agents, Museums, Travel Agents, Inventory Control, Law Enforcement, Art Galleries, Photo Libraries, Design & Advertising Agencies, Model & Recruitment Agencies and Medical Applications etc.

PC Album has been designed to utilize the latest image compression and data storage technologies. Images can be

7 Kbytes with this special board. This means that transmission of colour images over the normal phone line is now very viable, and up to 50,000 images can be stored on one optical disk.

PC Album allows a user to manipulate an image database. The database is completely menu driven. Users can enter, view, query and report on PC Album without having to write one line of code. Yet for the ambitious application, PC Album comes with its own Program Applications Language.

Price: £15,000 (ex VAT) for the total system. £1,225 (ex VAT) for the PC Album. Contact: Freehand Ltd, York House, Tylers Court, Cranleigh, Surrey GU6 8SS. Tel: (0483) 268000.

MIPs Away!

Sir Clive Sinclair has announced that he is close to releasing a 250mips (million instructions per second) RISC processor. According to Sir Clive, it will be targeted at the

specialist graphics market, bringing the cost of a high-performance graphics workstation down to around £2,000. It should arrive within the next 8-10 months.

THE FIRST COMPUTER OLYMPIAD

The ballroom at the Park Lane Hotel London recently played host to the world's first Computer Olympiad. The event was billed as being the largest competition for computers and computer programs ever held anywhere in the world. Eighty-six programs from sixteen different countries from as far apart as the cold plains of the Soviet Union to the dusty deserts of the Australian outback. The event was the brainchild of former international chess master David Levy. When questioned as to the point of comparing computers abilities against one another he described it as "Fun". This statement summed up all that happened within this the first Olympiad. The tension, the heartbreak, the competitiveness and the feeling of being part of a slice of history was all good 'FUN.....'

Fifteen of the worlds most popular thinking games made up the program of events. Scrabble, Othello, Connect 4, Chinese Chess and of course normal chess made up the main part of the competition, although a few contestants opted to program their computers to play popular card games. Bridge, being a favourite among the Americans.

The names of the various computer programs were put into a hat, each game having there own separate pile. Then two names were pulled out at a time and a knock-out system was incorporated with the winners name being placed back ready to be chosen for another round.

The final day of the Computer Olympiad ended in style. A gold, silver, and bronze medal were awarded to the top three programs in each category. Know particular country dominated the medals but England won a gold in Othello, Crab and Bridge.

Acer, the sponser of the whole event, whos headquarters are based in Tokyo are offering a 1.4 million dollar prize to the programmer of a computer Chinese chess program (Go) which can defeat the Chinese Chess World Champion. This particular event at the Park Lane didn't see the money leaving Acers hands, but the speed at which things seem to be progressing could see one of the many programmers with a larger bank account who are attempting to take the money from Acer.

Following the success of this event, dates have already been planned for the 1990, Computer Olympiad. If all goes well Acer will still be the Sponser and maybe the 1.4 million dollars prize money will still be standing..... What ever happens lets hope next year's Olympiad is just as much FUN...

MAXI Disk v2.0

Are you tired of running out of space on your floppy disks? Herne Data Systems say you can even fit 420k of data and programs on a 360k disk, 800k on a 720k disk, 1.4 meg on a 1.2 meg disk or 1.6 meg on a 1.44 meg disk. Using DOS version 3.2x or later, MAXI Disk formats your floppy disks with extra tracks and sectors not normally used by DOS to create special custom DOS compatible disk formats which take full advantage of the space missed by DOS. MAXI can be used on almost all sys-

tems running PC- or MS-DOS 3.20 or later (including DOS 4.0) to provide full access to the expanded capacity disks reliably and transparently.

MAXI will format floppy disks only. Unlike the DOS FORMAT program, MAXI cannot be used to format a hard disk, thus helping to prevent accidental losses of valuable data by inexperienced users.

Price \$19.95 (US). Contact: Herne Data Systems Ltd, PO Box 714, Station 'C', Toronto Ontario M6J 3S1. Tel: (416) 535 9335.

Kenny Dalglish



KENNY DALGLISH SOCCER MATCH is the second of a trilogy of soccer games. The first in the series is a football management game, now the second game provides **ARCADE ACTION** of the match. The following on from Kenny Dalglish Soccer Manager, Impressions have announced the release of **KENNY DALGLISH SOCCER MATCH**.

trilogy will be completed by the game now under development that will trace the fortunes of an individual player, trying to make it to big-time soccer stardom.

KENNY DALGLISH SOCCER MATCH brings new features to the arcade soccer game. Most notable of these are its graphics and presentation, and its new player-control system.

Simplified user interface PCs and workstations

What is claimed to be a significantly friendlier user interface for PCs and workstations has been developed at Siemens Research laboratories in Princeton, New Jersey. This software package is what is called a "tiled interface" — a program implemented under X-Windows to facilitate easier working.

In contrast with previous techniques, windows relating to various sub-tasks do not overlap on the screen, but are arranged adjacent to each other in various sizes. As the information relating to all sub-tasks remains visible, work on complex applications is made easier, especially when several sub-programs have to be pro-

cessed simultaneously.

The technique developed by Siemens arranges the position and size of the windows automatically. It is analogous to the application of tiles of various size, shape and colour on a wall and, therefore, it is known as the "tiled window technique". The software program — the tile window manager — controls the size, placement and lettering of the windows on the screen.

The tiled window manager is implemented under X-Windows, which is supported by a series of leading computer manufacturers. It is available from MIT as the X-Windows Version 11, Release 3.

Home Office Kit

The Disc Company has announced the release of The Home Office Kit solution package for the Amiga 500. The Home Office Kit is a complete pack designed for the new or existing Amiga owners interested in working at home, the company tells **AUI**.

The Kit comprises KindWords 2.0 wordprocessor,

Pagesetter 1.2 desktop layout program, Maxiplan spreadsheet, InfoFile database, as well as over 35 different styles of headline fonts and an extensive library of clip-art.

Price: £149.95 (including VAT). Contact: The Disc Company, 1 Rue du Dôme, F-75116 Paris, France. Tel: (33 1) 45 53 10 53.

AMIGA'89

AMIGA'89, the European Amiga exposition and conference, will be held November 10-12 at the Koln Messe Center, in Koln, West Germany. To-date, 90% of the exhibit space has been sold and a record 35,000 attendees are expected, claim Markt & Technik, the

trade show sponsors.

In addition to the strong turn-out, a conference and educational seminar program will introduce many areas of Amiga technology, with additional classes on advanced subjects. Commodore Germany are also official show sponsors.

Enter the European Superleague!

CDS Software has announced that programming has been under-way for the past few months on a new title — **European Superleague** — a graphic simulation of the toughest job in sport!

The player must think — and act — quickly, trying to balance training schedules, tactical plan-

Choose from any of the eight teams available: Liverpool, Arsenal, Rangers, A.C. Milan, Real Madrid, Bayern Munich, PSV Eindhoven or Marseilles. The aim is simple — to manage the European Champions by the end of the season. (It might not turn out to be the club you started the season with —



ning, squad morale and confidence, boardroom politics, a fickle press coverage and still have to contend with seven other, computer driven managers, all of whom play an experienced and tactical game.

even managers can transfer!). Match postponements, injuries, discipline problems, a stubborn self-opinionated club Chairman and temperamental star players might all conspire to stop you, but then that's football.

DR. OXIDE SLICES PRICES!

Comp-U-Save's cost-cutting clinician is at it again! This month Dr. Oxide, a bargain-basement surgeon if ever there was one, offers the industry's lowest prices on hardware and software, plus special deals on products available only through Comp-U-Save!

BUILD YOUR OWN HARD DRIVE KITS!

5¼" powered hard drive chassis with fan only £77.00 each
3½" powered hard drive chassis with fan

1000 or 500 SCSI interfaces with passthru and software for

£121.79 w/room for 2 megs

All you need is a SCSI hard drive and you're ready to Rock and Roll!

Call for SCSI hard drive prices

AMIGA PUBLIC DOMAIN

OVER 900 DISKS!

Largest Amiga PD Library in the World!

also C-64 & C-128 — Amiga PD — £2.50 each

Write for Free Catalogue

EXTERNAL SLOT EXPANSION FOR AMIGA 500 and 1000

Now you can use most of the expansion cards designed for the 2000 hard disk controllers, 2/4/8 meg RAM cards. A2088 Bridgeboard, etc. Use low cost IBM compatible expansion cards already supporting a wide range of business and scientific applications. Designed to work with auto configurable cards. Meets Zorro Bus and Amiga 2000 Bus electrical specifications. Available exclusively through Comp-U-Save!

"THE INTERN 500" 2 — A2000 slots — £127.50

"THE INTERN 1000" 2 — A2000 slots — £127.50 with power

DR. OXIDE INTRODUCES "THE SURGEON"!

8 slots for your A500 or A1000!

4 — A2000 slots, 3 — AT slots, 1 — XT slot

With power — case and one drive bay.

Will work with new AT bridge board.

£375.00

Amiga Hard Drives 500 - 1000 - 2000

20 Meg — £375 32 Meg — £435.99 45 Meg — £477.55

Amiga External Drive £89.50

Only Uses Half the Power of 1010 — with Pass thru

Amiga 2000 internal Drive £75.65

Panasonic WV 1410 Video Camera

For Digitizers — £124.99 16MM Lens — £16.60

Special 2400 Baud Modem — £92.95

Comp-U-Save

410 Maple Avenue, Westbury NY 11590

0101 (516) 997-6707 (Tech Support)

Outside NY State (800) 356-9997 (Orders Only)

FAX (516) 334-3091



DR. OXIDE
VOTED
BEST-LOOKING
DEALER
2 YEARS
IN A ROW!

A2000 HARD CARDS

30 meg	25 ms	£362
40 meg	11 ms	£503
45 meg	25 ms	£422
80 meg	11 ms	£740

MEMORY BOARDS!

A2000	8 meg board w/2 megs	£304.50
A500	2 meg board w/1 meg	£224.35
A1000	1.5 meg board w/1 meg	£224.35

DISKS	DS/DD 3.5"	£0.69
-------	------------	-------

***NEW! ADVANCED GRAVIS JOYSTICK £23.00**

Fantastic for flight simulators!

CHIPS — CHIPS — CHIPS ...call!

★ We carry tons of hardware and software for the Amiga. Call for prices.

We welcome dealer inquiries on all our products.

**BUY THE LATEST U.S.
SOFTWARE DIRECT! HUGE
DISCOUNTS**

Calling ALL Programmers

*Psst, need access to a standard file requester?
Want to implement a CLI command but you do
not want to write a template handler.
Mark Smiddy says - look no further than
the ARP library*

There is a long standing argument put forward by GEM's fans, which states: GEM is better than Intuition because it has a standard file request. Thank you, gentlemen, we accept your gracious comments and offer you these few words of wisdom: The secret is to bang the mice together!

You have to admit though, they are right. The lack of a Standard file request in Intuition has been a long-standing problem with the Amiga's iconic interface. All that might change if we all adopt a standard - the same one. Just look how IFF has made the Amiga stand out among other home microcomputers. No matter what the

graphics package is, if it supports IFF it can export to almost all other Amiga graphics based software.

At last I can make public the news you have all been waiting for, all Amiga's now have access to a standard file requester. If you read the report on Workbench 1.4, you can be excused for thinking my brain is out to lunch; think again. To tell the whole truth, this news is old - but it went almost unnoticed everywhere. The answer lies deep within the ARP library and, herein lies the problem - ARP is free and all too rare. If it cost money, everyone would have a pirate copy I expect! The only commercial UK program I have seen use ARP is HiSoft's superb, Devpac 2.

So why should you use ARP anyway? At the expense of a measly 17k (at present) you can have access to a vast library of routines that make programming the Amiga a lot easier. We will be covering some of the more interesting ones in a future issue, for now though here is how to create a simple file requester in assembler. This could have been shown this in C, but C programmers are big boys capable of working it out for themselves. Besides, I happen to find 68000 assembler easier to use than C. One other thing, the ARP library is completely compatible with the DOS library and could almost replace it.

M.S.

```
*****
* Demo of the file requester from ARP 33+ *
* The function prints complete filename to stdout *
* Used Devpac II for simplicity and elegance *
* Other assemblers will need the symbol table *
* CALLARP macro is defined like CALLDOS macro *
* BUT with _ArpBase in A6 *
* (c) Mark Smiddy (use and abuse as you please) *
* Thanks to Charlie Heath for the Filerequester *
* and the Microsmiths for ARP *
*****
```

```
opt      c+
incdir   ":include
include  exec/exec_lib.i
include  libraries/arp.i
include  libraries/arpbase.i
```

case sensitive

I want to call EXEC
And ARP/DOS too

```
OPENARP
move.l   a6, _ARPBase
```

Open ARP library
Macro returns ArpBase in A6

doit

```
lea      select(pc), a0
CALLARP  FileRequest
```

These few lines are IT
The rest is for support!

continued on page 14

continued from page 13

```
tst.l    d0
beq.s    doneit
```

User selected CANCEL?
if yes, return to user. .

```
lea      select(pc),a4
move.b   fr_FuncFlags(a4),d0
eor.b    #FRF_DoColor,d0
move.b   d0,fr_FuncFlags(a4)
```

This changes FileSelect colour
but not a lot . . . just
makes it stand out a bit
can get the window struct. . .

*

```
lea      select(pc),a4
move.l   fr_Dir(a4),a0
lea      path_name(pc),a1
```

This compiles a pathname
base of structure
pointer to start of dir name
pointer to start of path_name

.loop

```
move.b   (a0)+,(a1)+
```

copy name across

Continued next month

ARPing On

Mark Smiddy finds there is more to AmigaDOS than meets the eye - especially if you happen to be using the Microsmiths' version

The acronym ARP stands for AmigaDOS Replacement Project, which is a bit of a giveaway really. Still, if you consider the ARP system has been around for several years now, you may be wondering why you have not heard about it. I accept there will be some readers who have heard of ARP but many readers will not. You may also ponder the question: why have we waited so long to bring you the news? The answer is simple, ARP has only just reached completion with the 1.3 release. Also, no prizes for noticing that is the same version number of the current AmigaDOS.

This does beg the question, why would you want to replace AmigaDOS 1.3 in the first place? The answer is blowing in the code: AmigaDOS is written in BCPL, all the ARP commands are written in C or 68000 assembler. For this reason they are tighter, faster and more efficient all round. For another reason CBM would never admit - you have to look farther - ARPDOS demonstrates considerably fewer bugs. It has bugs, the authors admit that - they even give details - but there are fewer of them than in AmigaDOS.

Finally and best of all - ARPDOS is at present Public Domain! That means it will cost you, at the most, a miserly couple of pounds or dollars to get IN with the informed crowd, and get more OUT of your Amiga.

To give you a rather nice example, I have upgraded my Workbench 1.3 disk to ARP and changed the Startup script. After due experiment I have reduced the

boot time to around 50 seconds and simplified the whole process. No cheating, my Fastbench 1.3 does everything CBM's Workbench does - but it has more commands available including ARC! Sorry Commodore, the ARP startup does not need a startup-II file at all. So how did I manage it? Have I devised a fantastic new setup? Have I used some special multi-purpose commands? No. I just made use of the extended commands available under ARP.

Case in point, examine the way AmigaDOS 1.3 creates and assigns directories:

```
makedir RAM:t
assign T: RAM:t
makedir RAM:env
assign ENV: RAM:env
assign C: SYS:c
assign FONTS: SYS:fons
```

And so it goes on. . . To be fair, Commodore have made those commands resident before using them so things have speeded up - a little. Now let us try that again, under ARP:

```
makedir RAM:t RAM:env
assign T: RAM:t ENV: RAM:env C:
SYS:c FONTS: SYS:fons
```

Somewhat faster that way, is it not? Do not even bother to try that with AmigaDOS because it simply will not work. Each command only has to be loaded from disk once. This means there is no reason to make the commands resident in the first place, so you save memory and time overheads. The rest of the ARP startup commands work in much the same way; it is enough to

make you cry. The complete script is shown in Listing I.

The story does not end there though. Microsmiths, who created ARP, were not happy with making AmigaDOS look plain silly - they wanted to make it obsolete. In keeping with the Amiga tradition they have extended the rest of the DOS too. Remember the trick to get AmigaDOS spit out its command template by typing, for instance:

DIR ?

and the reply was:

Usage: DIR <Directory name> OPT a d i
Now look at the ARP version:

DIR ? Usage: DIR OPT/K « ADFHIS »
ALL/S DIRECT/S FILES/S HILITE/S
INTER=INTERACT/S SIZE/S:

It has a bigger command template, and if you need more help you can get it by typing another question mark at the Usage prompt! This is a feature of all the ARP commands, not just odd ones. Almost every AmigaDOS command has been extended in some way or other. The COPY command now has no less than eight arguments - and some of those use ARP's internal (environmental) variables.

Wildcards have been extended to use the old faithful ** everybody can understand, PLUS the old #? to retain compatibility. Not only that, it is even possible to use exclusive wildcards or ORed searches. To show these in action: To get a directory of all the files EXCEPT the ones ending in .info you enter:

DIR .info

My version seems to be slightly bugged here, incidentally. However, what about getting a list of just the files with .asc or .txt or .s extenders? Tricky? Consider this:

DIR *.asc|txt|s)

The strange character | used here repre-

continued on page 111

BRAND NEW SOUND TRAP III Sound Sampler

Over the past two years Omega Projects have been designing and building LOW COST sound samplers with outstanding performance. They have taken into account ALL the requests received from existing users of SOUND TRAP I and II, and put them into a Superb High Quality package, SOUND TRAP III at a price below most games. They have also included *FREE* purpose written software and even supply the interconnecting cable, which allows the connection of most portable audio devices; a *FREE* screwdriver with which to secure the unit to the parallel port and to adjust the input volume. The full features are:

- 1) **SMALL & COMPACT** (fits in the palm of your hand)
- 2) **REVERSIBLE** (fits ALL A1000 & A500/2000 machines by simply turning the sampler around, and moving a jumper)
- 3) **PRINTER PASS-THRU'** (no matter what Amiga you have, the open end of the sampler acts as a printer pass-thru') no need to ever have to unplug the sampler in order to use the printer.
- 4) Gives CD quality and in our (and a few others) opinion, is better than more expensive packages.
- 5) **ON/OFF SWITCH**
- 6) **INPUT VOLUME** adjustment
- 7) Comes complete with **FREE** software + lead + screwdriver
- 8) Comprehensive instruction manual
- 9) Works with 99% of existing parallel sampling software
- 10) **FULLY PACKAGED** and **POST FREE!**
- 11) **NTSC** version also available

MICROMART said ".... excellent quality and value for money ... 9 out of 10 with an extra point for the pass-thru ..." *Rodrigues*

Available **exclusively** from **BYTES & PIECES** for just **£37.50** all inclusive.

BYTES & PIECES

37 CECIL STREET, LYTHAM, LANCs FY8 5NN
UK AGENTS FOR SPIRIT TECHNOLOGY AND XETEC INC,
USA; LEADMAN ELECTRONICS, TAIWAN

Sonix Sound Trax Review

Aegis Development have released a couple of companion volumes for their Aegis Sonix music program. Each volume (2 disks in each volume) contains pre-written back-up tracks which you can play along with via the Amiga keyboard. The only requirement is that you do need to have the Aegis Sonix music software as well.

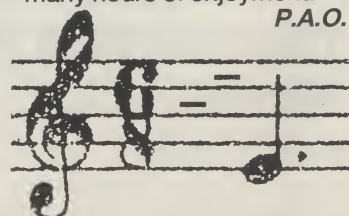
The songs have been arranged/composed by Jon Rami. Volume 1 contains 9 songs.... Grove, Well Well, Nice Try, Electric Demo, The Fair, Johnny Boy, Work, Amazing Grace and The Beautiful. Volume 2 has eight songs.... Funkier, Big, Honesty, Blues Man, Solman, Swinger, Fiftyz, and Baby Baby. All in all they are not bad arrangements and good fun to play along with. You just turn on the voices by clicking on the black numbered Sonix boxes. When the boxes are blue you will hear the voice at half volume. When they are white the voice is off. You can choose the voice to play along with by moving the small Sonix keyboard under the required voice box. The Solman incidentally, (on Volume II) let's you play 'interactive vocals'!

As well as using the disks for their intended purpose you get an extra bonus because the instrument and riff samples can be read by programs like the Aegis AudioMaster II, so it's possible to acquire some useful sound samples - there are some interesting sampled guitar riffs on volume 1.

Jon Rami performed with Stevie Wonder, Ray Parker Jnr., and the Drifters amongst many others and has been involved in the world of professional music and audio through his work for Roland, VOX and Marshall Amps.

SoundTrax is a package for the home user who wants to play music without having the hassle of building songs track by track. If you cannot actually play an instrument, but like the idea of making music, then this sort of interactive music is a nice idea - it's the modern day equivalent of the pianola. The SoundTrax volumes are a good idea and will no doubt give a lot of Amiga owners many hours of enjoyment!

P.A.O.



CALL US FOR YOUR BEST POSSIBLE PRICE

JEM

COMPUTERS

		
LC10 £135	LC24-10 £199	LC10 COLOUR £175

MANNESMANN TALLY LASER

MT905 6 ppm, 5,000 pages per month
 £950 300,000 page engine life
 Hewlett Packard Laserjet
 Series II emulation

INCLUDES ON SITE MAINTENANCE

AMIGA 500

AMIGA 500 From £259

A500 + TV MODULATOR +	
- RETURN OF THE JEDI - CUSTODIAN	
- MERCENARY - WARLOCKS QUEST	
- ZYNAPPS - HELLBENT - POWERPLAY	
- ELIMINATOR	
- 23 PUBLIC DOMAIN GAMES	£315
PHILIPS 8833 MONITOR	£189
COMMODORE 1081 MONITOR	£165
COMMODORE 1084s MONITOR	£199
RAM EXPANSION	£99
SECOND DRIVE	£75

ATARI ST

ATARI 1MB EXPLORER PACK	£220
ATARI 1MB + SM 124 MONITOR	£320
SUPER PACK 21 GAMES + ORGANISER SOFTWARE DATABASE SPREADSHEET WP	£290

TEL • 0202 • 740131

and CALL IN TO OUR EXTENSIVE SHOWROOM IN POOLE, DORSET
 SHOWROOM OPEN MONDAYS TO SATURDAYS 9.30 to 6pm and

WE STOCK A FULL RANGE OF AMIGA SOFTWARE

COMMODORE PCs

	MONO	COLOUR	EGA
PC10SD	£499	£599	£749
PC10DD	£589	£739	£875
PC20HD	£779	£959	£1,089
PC40SD	£1,065	-	£1,270
PC40HD	£1,393	-	£1,587

COMMODORE B2000 XT BRIDGE BOARD

+ PHILLIPS 8833
 + 29 MB HARD DISK **£1,249**

SOFTWARE

Full software list inc:

LOTUS	Wordstar	Ventura
ASHTON TATE	WordPerfect	Ability
DIGITAL (GEM)	SAGE	Clipper
Multimate	MICROSOFT	
Smart	Supercalc	

PRINTERS

9 PIN

MY81	£110.00	EPSON LX800	£150.00
CIT 1200	£120.00	KXP1081	£120.00
STAR LC10	£135.00	CIT 180E	£145.00
SEIKOSHA 1-80A	£115.00	STAR LC10 (COL)	£195.00

24 PIN

SEIKOSHA SL80A	£235.00	STAR LC24-10	£255.00
NEC P2200	£255.00	EPSON LQ500	£255.00
KXP 1124	£255.00		

LASER

BROTHER HL8	£1,400.00	CANON LP08	£1,275.00
STAR LASER8	£1,230.00	KXP 4450	£1,350.00
HERMES 800	£1,099.00	HPLASERJET II	£1,270.00
MY905	£950.00		

INK JET

CANON BJ130 INK JET PRINTER	£575.00
-----------------------------	---------

All accessories low low prices

All Epson Printers	20% discount
All Brother Printers	20% Discount
All NEC Printers	25% Discount
All Toshiba Printers/Lasers	POA
HP/Roland/Calcomp Plotters Minimum	20% Discount
All Hewlett Packard Lasers	25% Discount
All Amstrad Printers	POA

ALL PRICES EXCLUDE VAT
 COURIER DELIVERY £5

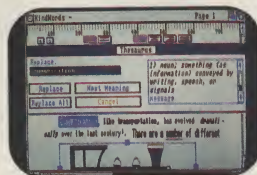
406 ASHLEY ROAD, PARKSTONE, POOLE, DORSET
 TELEX 41445 JEME G

FASCINATING COMPANY



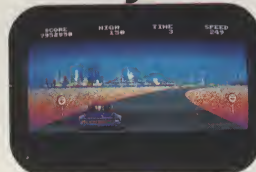
THE DISC COMPANY PRESENTS THE PERFECT COMPANION FOR YOUR AMIGA :
THE STARTER KIT, A COLLECTION OF SUPERB GAMES AND ENTERTAINMENT SOFTWARE
WHICH WILL BRING OUT THE BEST IN YOU AND YOUR COMPUTER.

KindWords 2.0



Simply, the world's best selling Amiga word-processor with a 100.000 word British Dictionary and 470.000 word Thesaurus.

Crazy Cars



Stunning graphics take you on a hair-raising ride through America.

FusionPaint



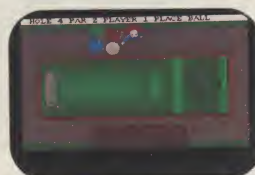
An easy to use paint package that allows your imagination to run wild.

Super Ski



All the thrills without the spills! Compete in the downhill race, slalom and giant jump.

Miniature Golf



Select your course, your clubs and don't forget to shout "Fore!!!"

STARTER KIT

**MAKE FRIENDS
WITH YOUR AMIGA.
INTRODUCE IT
TO THE PERFECT
PARTNER.**

£69,95
inc.VAT

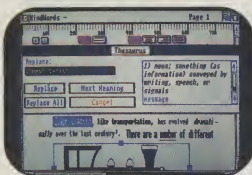
Both kits are available from: Addons: Southampton; SDL: London 01-300 3399; GEM: Harlow 0279-412441;
HB-Marketing: West Drayton 0895-444433; Amiga Centre: Edinburgh 031-557 4242
For Further information contact The Disc Company: Paris 33-1 45 53 10 53. BP 435.16, F-75765 Paris Cedex 16.

A FASCINATING COMPANY



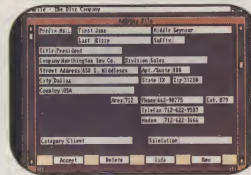
WHETHER YOU'RE RUNNING A SMALL BUSINESS, A LOCAL CLUB OR A BUSY HOME :
THE HOME OFFICE KIT INCLUDES EVERYTHING YOU NEED FOR EFFECTIVE MANAGEMENT.

KindWords 2.0



The ideal Word-processor for impressive, accurate business communication.

InfoFile



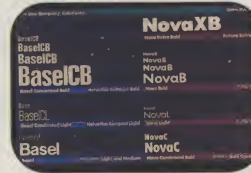
A powerful database which can store all your information. An inclusive set of ready-made file formats helps you get down to business from day one.

PageSetter 1.2



An incredible DTP system to produce professional brochures, newsletters etc...

CaleFonts & Artists'Choice



Over 35 purpose-designed professional fonts.

A fabulous clip-art library of over 200 graphics.

Maxiplan 1.9



The best selling Amiga user magazine spreadsheet award winner.

HOME OFFICE KIT

GET ORGANIZED
 WITH THE BEST HOME
 PRODUCTIVITY KIT
 AVAILABLE FOR
 YOUR AMIGA

£149,95
 inc. VAT

Both kits are available from: Addons: Southampton; SDL: London 01-300 3399; GEM: Harlow 0279-412441;
 HB-Marketing: West Drayton 0895-444433; Amiga Centre: Edinburgh 031-557 4242
 For Further information contact The Disc Company: Paris 33-1 45 53 10 53. BP 435.16, F-75765 Paris Cedex 16.

The Reluctant Artist

Have you ever considered your printer as being a medium for your creative talents? Mark Long introduces us to this welcome idea with useful suggestions for the festive season – Graphics by Sharon Long.

With the festive season fast approaching, many of you will be thinking at some point about Christmas and New Year cards. If you do not want to choose from the usual selection available, but would much prefer to send your friends and relations a more personalised greeting, why not harness the assistance of your friendly Amiga and dot matrix printer?

If you are now in the process of ignoring this article completely, because you *know* your printer just is not good enough to do justice to your creative outpourings, then think again – it does not matter how poor your printer is – you *can* get good results – provided you make sure that the images you create on your screen are matched to the printer's output capabilities.

It is quite true that most printers – even the fancy ones from Mitsubishi, Integrex and Xerox, are incapable of output remotely comparable with the masterpieces the Amiga is capable of displaying, and this is even more true of the standard types of printer most of us have at home, whether ribbon, ink jet or thermal. But you should not just give up because of this – instead, you must begin to think of your printer as an artistic medium in itself, just like any other artistic medium, and as such, subject to the same kinds of limitations. Thus, armed with a lino-cutter and a piece of linoleum glued to a hardboard backing, you would not expect to, or even attempt to, reproduce John Constable's Haywain, or a Leonardo cartoon – but you might try for an interpretation of them (should your artistic

ambitions lie in that particular direction!)

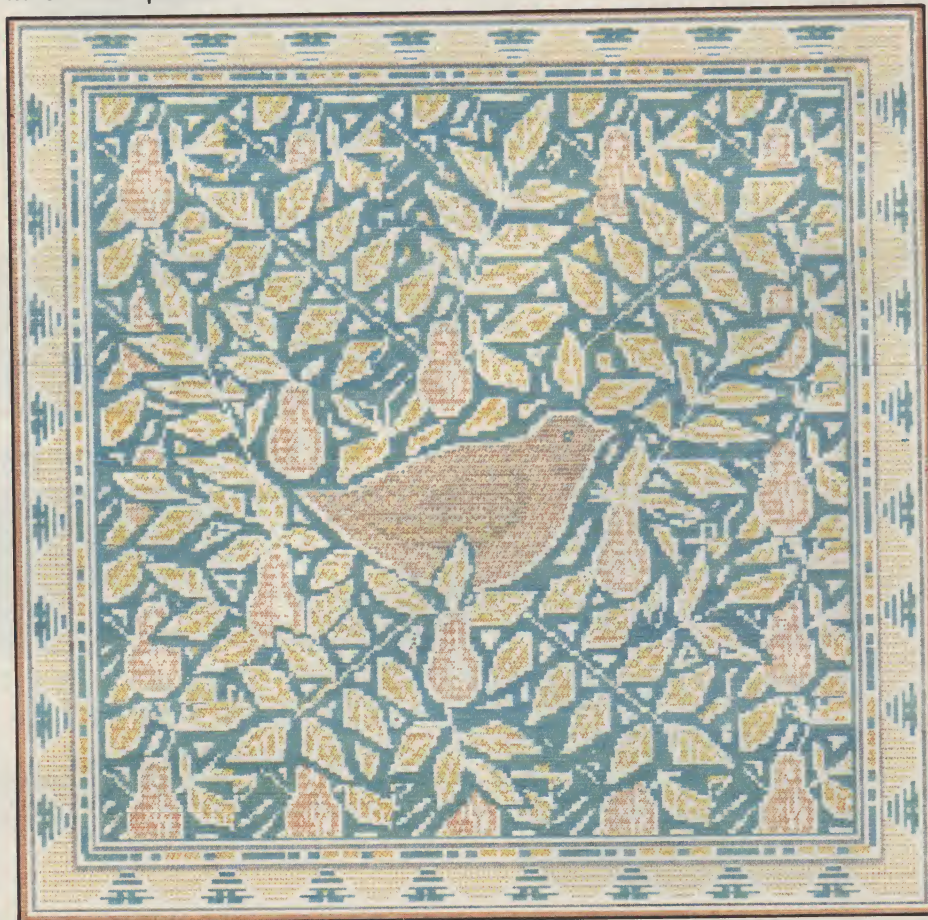
Exactly the same is true for your printer – so that, whilst DeluxePaint on the Amiga gives you, within limits, certain artistic possibilities, your printer, which has quite different limitations,

gives you, similarly, a quite different range of possibilities.

What is not always clear, however, is exactly what possibilities *are* available to you, and how to exploit them to the full. So, if you are keen to try your hand at worthwhile images on the Amiga from a reproductive point of view, here is some step-by-step advice on how best to approach it.

If your printer is a colour one, then your first step should be to set up, and then print, a range of different colour palettes, preferably as much across the 4,096 colour range as possible. If you have no colour option, then apply the same test for a grey scale. In each case, the tests will rapidly demonstrate which colours and saturations work best – even if those colours are not at all true to their appearance on screen.

Once you have established a preferred range of colours, or densities of grey, you have something to start work with. Before you produce your masterpiece, however, you need to do some further tuning of your set-up. Print some sample files varying the Preferences' controls – density, half-tone or scatter etc. The best tests for these are those



which use a combination of solid colour in some areas, with closely spaced, but different colours, in other areas. Experiment also with printed size – certain combinations print better if small, others much better when large.

Do not expect to get any results where you will say "Wow! This is an absolutely perfect print-out!" What you will get, however, is a good indication of what goes together better than anything else – even, dare I say it, the best of a bad lot!

But this is only the beginning. Once you have done this, it is time to start creating some actual images on screen for printing out; obviously you will have your own personal ideas on what for you constitutes a suitably festive formula, from a traditional nativity scene through to a tinsel-bedecked Robocop(!), but here are a few ideas that we have come up with, both the screen shots and the finished printed output, produced on a Fujitsu 9 pin colour ribbon printer. On this machine we found that by far the best results were to be gained from geometric and "tribal" patterns. And as you can see from any comparison between screen and card, those results bear little, if any relation to what went on the screen in the first place, however pleasing those results are.

As a general rule, particularly as far as the Fujitsu printer is concerned, and

therefore for most other dot matrix printers, you will not go too far wrong if you observe the following guidelines: keep it simple, the ordinary dot matrix ribbon cannot handle fine detail all that well; separate your areas of strong colour with bands of white – in fact, use a lot of white! Try to avoid too large areas of any single colour – try picking bits of pattern as a brush and using it as a fill pattern to colour large areas. Again, it is better if the chosen pattern has a lot of white in it. Use features the computer deals with well, borders, patterns, repeats made with simple brushes, symmetry. Designs based on lino- or wood-cuts seem to work best. Go for pure(ish) colours. Printers tend to 'muddy' dull colours and often have difficulty with greys not based on saturations of black (at least, ours has).

If you cannot print in colour and feel it essential to have colour cards, there is no real problem, especially if you design on screen in black and white, as very good results can be obtained from a water colour wash or colour pencil shading over your monochrome print. And do not despair if you only have a thermal printer – photocopy the results onto a better quality paper; your local instant print shop will almost certainly have a wide variety of papers in a similarly wide range of colours.

Once you have finalised the mar-

riage between design and final product, all that remains is physically to manufacture your cards. A visit to your local instant print shop or stationery store should provide you with all you will need, either a suitable blank card, or perhaps a specialised greeting card blank, pre-printed with a border, usually in gold, and sometimes with a message inside. A word of warning, if you choose this option, visit your instant print shop first, before you print everything out the wrong size! Whichever you decide, you will need a repositionable adhesive, preferably Spraymount, to stick the pictures in position, although Prittstick or Copydex would probably do just as well. And one final tip – thick, particularly textured card, can be quite difficult to fold, so use an old printer's trick – a dessert spoon! Score the centre of the card with the end of the spoon handle, fold the card gently, and flatten it down firmly with the bowl of the spoon – it is simple, produces a perfect fold, and avoids fingerprints!

All this might seem a daunting task, but remember, your set-up procedures will only occur once, so future production lines will be up and running both easily and very quickly. And what is more, you will have fine-tuned your computer and printer for a great many other projects. Merry Christmas!

M.L.

SIREN SOFTWARE

NEW

NEW

★★★ AMIGA SOUNDBLASTER ★★★

The AMIGA SOUNDBLASTER is a small stereo amplifier that comes complete with 2 high quality 20 WATT 3 way speakers. It is easily connected to your Amiga 500/1000 and adds a new dimension to all games.

Everyone knows that the Amiga has the best sound facilities available on any popular computer today. Unfortunately until now, unless you could connect your Amiga to your stereo system you could not appreciate the quality of the sound.

- ★ Comes complete with 2 high quality stereo speakers
- ★ Twin volume/balance controls
- ★ Headphone socket
- ★ Very easy to connect
- ★ Compatible with all software/hardware

- ★★ Free stereo headphones with all orders for a limited period ★★

Amiga Soundblaster is just £39.99
including VAT and P&P

SIREN SOFTWARE · TEL: 061 228 1831
84-86 PRINCESS ST, MANCHESTER M1 6NG



Accessing the hardware from C

Mike Nelson dives into C...

The Amiga is equipped with one of the most comprehensive and advanced operating systems on any computer and leaves very little for programmers to panic about when it comes to making screens, windows, menus etc. under Intuition. The graphics library takes care of building other displays and drawing lines, circles or even filled polygons. However, it is sometimes desirable to take your code past all of this and directly access the heart of the computer at the level of the hardware, particularly for writing games which are not designed for a multi-tasking environment (although with a bit of care it is perfectly feasible to do so).

"There are many interesting registers which you can play about with, including those controlling the video display, sprites, blitter, and sound as well as the Input/Output chips"

The ROM Kernel does provide device handlers for accessing hardware but they are extremely cumbersome to use and sometimes they are simply not fast enough for many applications. The only real alternative is to read and write directly to hardware registers, more or less commandeering resources such as joystick positions or audio hardware for the exclusive use of your program. Since most Amiga users are Commodore '64 graduates, the judicious use of Peek & Poke equivalents may even be a welcome relief from all those structures and members and many of the princi-

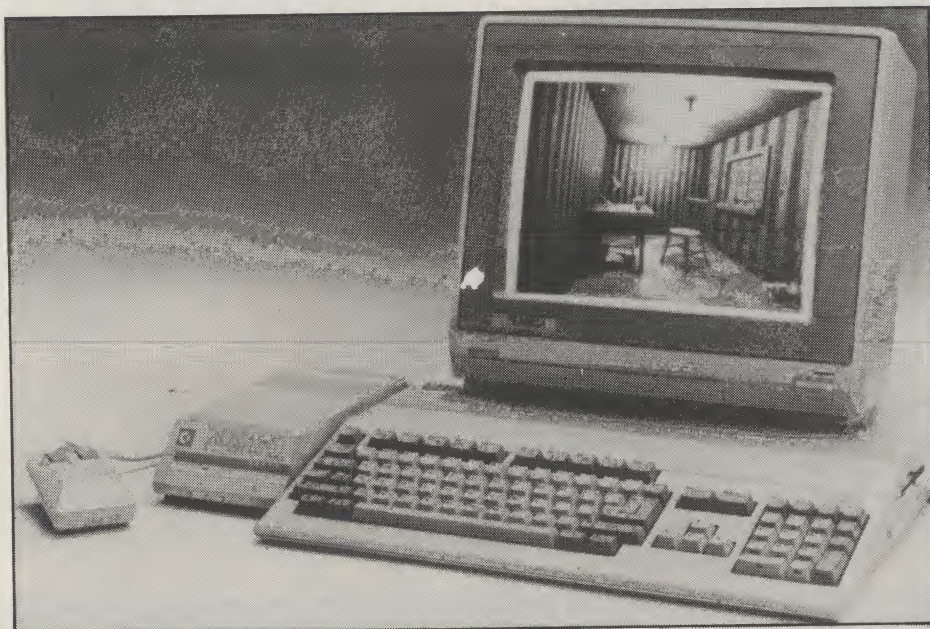
pals of attacking the hardware are common to both machines!

The ideal course, advocated by the designers of the operating system (naturally!), is to "ask" for a piece of hardware which you only receive if no other program has a stranglehold on it, and relinquish it after use. This is unsatisfactory in many cases as you may only be guaranteed access every 1/60 of a second. Such timing OK for some situations, but if any kind of animation is involved, the time scale is nothing like fast enough: your program can get held up waiting for the OS to give you a slice of the action (e.g. some joystick info).

The Amiga is supplied with a wealth of amazing hardware which is the subject of the Hardware Reference Manual (available from all good bookshops and published at great expense by Addison-Wesley). The book is biased towards

machine-language but that need not deter the intrepid C programmer, illustrating the powerful low-level usage available from this language. Perhaps a word of caution is in order here. The book is extremely detailed and the subject confusing at first as there are many interesting registers which you can play about with, including those controlling the video display, sprites, Blitter, and sound as well as the Input/Output chips (CIA's), and not all of these are realistically programmable from C.

So what's it all about? Firstly, we must know where in memory the custom chips are located so we can access their registers. This is where things get slightly dodgy as, in the far-flung future, Commodore Inc. may decide to move this location in the MK-36 Amiga of the 1990's and your program will resolutely fail. In fact, knowing the Amiga it will



undoubtedly crash the machine. Still, we have no real choice but we can take precautions to minimise the effort of re-coding, should such an event occur. We can allow the compiler to set part of the problem right and use macros at the top of the program for any "magic numbers", otherwise known as "Pokes" to '64- bashers.

The program this month is mercifully short and so we can explain in some detail each step in the proceedings. All it does is to print the current status of a joystick in port 2 of the computer, including the fire button with an added bonus of playing about with the power LED. The `#include` file `hardware/custom.h` simply contains the definition of the `Custom` structure. This provides a simple but effective means of accessing any register found in the custom chips. Each register is named and the label is used consistently throughout the Amiga documentation. The name represents an offset from the start of the chip (currently at Hex. `$DFF000`) and while most of the registers are sixteen bits wide, a few aren't so this structure automatically accounts for this. Thus all we have to do is to declare a structure of type "Custom" and to access any given register is easy:

```
extern struct Custom custom;
joy = custom.joy1dat;

This code sets everything up and sets the UWORD joy to the value in the appropriate register. The BASIC equivalent is this:
```

```
custom = $dff000
joy1dat = 12
joy = Peek (custom + joy1dat)
```

How does the compiler know where in memory the declaration for "custom" is to be set, as my program does not actually set it? I am unsure of the precise mechanism whereby "custom" gets set to `0xdff000` but it works so don't knock it! The use of "extern" in this manner is somewhat unconventional as one of the selling points of C is its portability, but the likelihood of anyone running into problems trying to run this code on a Sun workstation is limited, to say the least! Seriously though, this may be a source of error if your compiler does not recognise the request and you will have to set it yourself in a manner similar to that described below for the CIAs.

Once we have set "joy", we need to test the bits in it to determine the position of the joystick. This is slightly more complicated than on the '64 as the register (joy1dat) also doubles up for input from the mouse. Pressing the stick right will result in bit 1 being set, whereas left sets bit 9. Forward and back are bits 9 and 1 tested after being Exclusively ORed with bits 8 and 0 respectively. The calculations performed are relatively straightforward and so will not be discussed in depth here. Try them out for yourself if you don't believe me!



The fire button also needs to be catered for if you are to release that ultimate zap, sending the super-alien exploding into OBLIVION-MODE. This data is inconveniently located in the CIA. The Complex Interface Adapter is only slightly more forthcoming with information than the Intelligence Agency with which it shares an acronym. As the name suggests, these two chips are more concerned with Input/Output than the custom chips (though why the fire button should be thought of as a different entity to the rest of the joystick escapes me, but I am just a programmer). They have a different location in memory (`0xbfe001` in this case) and my compiler seems loathe to actually set the `cia` variable for me. Still where machine has failed, programmer must boldly go and I use the macro `CIA-CHIP` to substitute for that hex. address. The variable is set up in the statement:

```
struct CIA *cia = (struct CIA *) CIA-CHIP;
```

This is quite an abbreviated statement, performing several tasks. Its appearance is very confusing for the beginner and crops up in most Amiga programs so it is worth explaining. We are telling the compiler to use the template `CIA` (declared itself in `hardware/cia.h`) when declaring a pointer to the chip, thereafter called `cia`. This name could have been anything, incidentally. The variable "cia" is actually a pointer and not a structure, as indicated by the preceding asterisk. The next step is to set this pointer to be hex. `bfe001`, using `CIA-CHIP`. The compiler will complain if

you omit the cast construct (`struct CIA *`) and grudgingly work, but this is simply a means of coercing the `ULONG` figure of `0xbfe001` into an address format, although the actual number is identical. Note that you may have to do this for the custom declaration if your compiler won't set it up for you.

We now should have access to the CIA we require for the fire button data and can use the `->` operator to set the UWORD "but" to peek in the appropriate register. (This is christened "ciapra" and from a compiler point of view, is actually an offset from `CIA-CHIP`). Paradoxically, I think, bit 7 is actually cleared when the button is depressed and set upon release. This is easily detected by using a logical AND 128 with a NOT (!) to turn things our way.

Whilst searching through the memory maps for the fire button location, I came across a bit which controls the brightness of the power LED of the computer. You too can now affect this thanks to the miracle of modern technology and AUI. As I am sure you will so thrilled at this prospect and don't fancy waiting for Uncle Lattice to compile, try the following BASIC pokes:

```
POKE 12574721, PEEK (12574721)
OR 2 ' Dim LED
POKE 12574721, PEEK (12574721)
AND 253 ' Brighten
```

There, that is sufficient BASIC for anyone and leads us nicely to the conclusion. Next month I shall take a look at sound generation and delve into the audio hardware using the techniques described above.

M.N.

Only Connect...

Mark Smiddy reviews a great innovation that looks set to revolutionise today's electronic office

Spaghetti - that is what this is all about. The inevitable bird's nest of interconnecting wires travelling between every computer and its plethora of peripheral devices. When I heard of Datalink I balked at the prospect of reviewing another variation on the tired old serial theme. As things turn out, this has been a case of severe technical dyspepsia: I came, I used, I ate my words - and they gave me severe indigestion.

Verran Electronic's Datalink, can be described as a TTM DTS or Through The Mains, Data Transmission System. In English, this means you can connect your Amiga to almost any other peripheral in the same office (or building come to that) without wires! So what, I hear you cry, why would I want to?

To take a simple example, imagine you have an office containing just an Amiga 500. To this you want to add a daisy wheel printer and/or modem. In a perfect world this is simple enough - but what if the nearest phone jack is downstairs? Or, you want to use the printer without waking the baby?

You could fit an extension to the phone, but that is a messy job; especially if it has to go up an open staircase or through the ceiling. What about the printer then? The best place for this is probably downstairs too, in the broom cupboard.

It is here the Datalink comes in. All you need to do is connect two units to the mains supply and to the respective devices: that is one to the Amiga and one to the peripheral. You just switch on

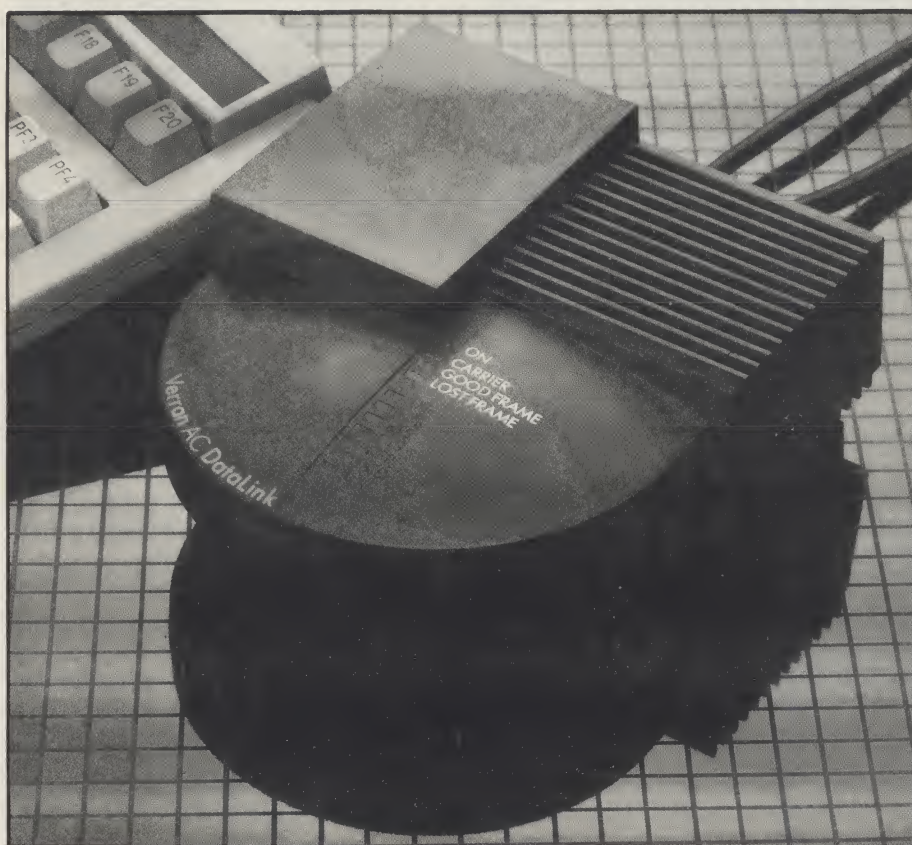
and use them as normal. If you were rich enough to afford three Datalinks - and therein lies the catch - you could have one connected to the printer and one to the modem. Changing the device is a simple matter of swapping a lead and flicking a switch. This is all done at the computer, the Datalink does the rest.

For a more realistic example, take an office like mine. Here there are no less than five computers - from an Amiga to a Z88 - and just one overworked LC-10 printer. By the addition of just three Datalinks I could move the LC-10 somewhere else, and have any two of the computers sharing it at any time. As things get even more complex, say ten computers sharing three printers: any computer could in theory, talk to any printer. The only proviso is: not more than two Datalinks can talk to the same printer (or device) at once; and others with the same address must be switched off.

Now you know the theory, how does the system work in practice? The first time I plugged on into my Commodore PC10, it refused to boot saying the keyboard and LPT ports were dead! One combined attack of angina and migraine later, I tried again and it worked. Quite what went wrong I am at a loss to explain, Verran suggest the PC - Commodore would doubtless blame the Datalink. Who cares, it works now. Once the system has been set up it performs as if the Datalinks were not there. The transmission rate is claimed to be one A4 page every three seconds, fast enough for every printer I have ever used.

Setting the Datalink up is a doddle - once you decode the manual which, to be fair is very good. It could be better for non-computer-literate people. For the record, you configure the main options on a set of DIP switches then press a button to program the unit. The setup is stored in non-volatile RAM so it is always correct.

Changing the address - or settings -



of any Datalink is as simple as flicking the correct DIP switch and re-programming. The operation takes all of ten seconds once you are familiar with the system. For the sake of memory, Verran have left a set of blank switch templates in the back of the manual so you will remember which address corresponds to each logical device. It really is simple when you get used to it. . .

As I have already hinted, the price of the Datalink does look a little prohibitive. More especially when you consider you must have at least two (transmitter and receiver) to make a working system. The question is, why are they so expensive?

For the answer you have to understand the technology that has gone into these machines. Each one has its own Zilog Z8 computer on-board running at over 12Mhz. The Z8 is a very powerful CPU with its own internal ROM and

RAM - making it a true computer on a chip. Combined with this is a specially designed thick-film hybrid driving the TTM FM transmission system. It should suffice to say this is VERY expensive technology. The development costs, which must have been enormous have not, in my view, been integrated too much into the final cost of each unit.

As an aside, you may be interested if the Datalink looks as good in reality as it does in these pictures - it does; it feels good too. The whole package has been produced with the sort of keen professional edge that has been sadly lacking in so many recent British products.

I only have one cavil, the socket cover seems to suffer from a fragile hinge. While I hope to be proven incorrect, I expect ham-fisted (industrial?) treatment would soon break this non-essential item. The remainder of this remarkable unit - right down to the non-

slip feet - is finished off beautifully; even Ferrari could be proud of it.

I have to admit, despite some initial problems getting the things started, the Datalink system is superb. This has to be the most effective way of connecting peripherals in any office or even school! It remains to be seen how long Datalink will retain its crown as the only unit available; that is, before Taiwan produces one at half the price. I would like to see the Datalink enjoy a long reign - it is a product of quality where standards have not been sacrificed for cost. Highly recommended.

Product: AC Datalink. Price: £175 + VAT for each unit.

Contact: Wilding Office Equipment and Dixons Business Centres. In case of difficulty, you can contact Verran direct on: 0252-872544.

How does it work?

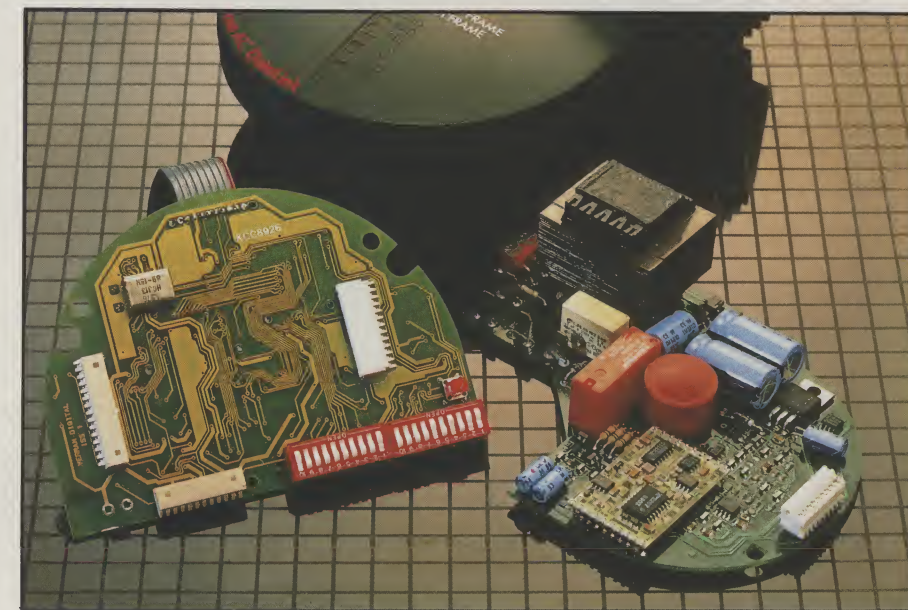
The theory behind the system has been around for several years, any amateur electronics enthusiast will tell you that. Mains Data Transmission therefore, is not a new idea - several commercial units are already using the system to remotely control things such as Hi-Fis. The system involves encoding data onto an FM carrier, launching it onto the 240V ring main, then picking up and decoding it elsewhere. Is it just a fancy modem?

The problem of transmitting computer data though is a little more complex. Just for starters, computer data comes in serial and parallel forms. Then, there is always the possibility of someone in the same office block receiving and decoding your data! The signal goes everywhere the ring goes - up to an effective maximum range of 100M between stations.

There is nothing - theoretically - stopping you from boosting the signal at preset points in the ring. This entails adding a slave computer to echo everything it receives. This only works for serial data, incidentally. Lastly, there is the problem of mains "spikes" causing corruption of data. Datalink solves these problems almost completely and does so in a typically British way: with elegant overkill.

So, just how do you stop the rest of the office picking up every signal you broadcast? Simple enough, you code the signal with a unique address. This is fine but what if you have more than one pair of Datalinks trying to talk to other devices on the same line? Again, simple (in theory) the information is sent in "packets."

The final solution is to send packets (short bursts) of data each with its own destination address. Each Trans-



mitter monitors how busy (or "dirty") the line is and adjusts its packet size accordingly. This reduces the risk of data corruption or loss. Receivers, on the other hand, look for packets which are addressed to them. Addresses are user programmable and can be up to 18 bits long - which means there are 4,194,304 possible addresses. The upshot of this is, data security is extremely high and the next office are extremely unlikely to clash with you. Before you get any ideas about downloading the code anyway, the data is encrypted with the same address key.

All this happens thousands of times every second. Computer boffins refer to such systems as packet switched networks. Those of you who are really alert, or at least have an understanding of hardware, will have realised another problem. No matter what sort of data is being transmitted there are more than just data lines used to perform the

physical electronic link.

Think about RS232, this has many different configurations from three wires upwards. The same goes for Centronics which uses eight data lines plus handshaking. The Datalink monitors every line and ensures both devices receive the correct handshake signals.

This question of handshaking brings about another point - serial handshaking. Serial devices are wired as either Data Terminal Equipment or Data Communications Equipment. The configuration varies from device to device so how does Datalink manage? Like everything else, a special serial connector is supplied with the machine. This has the unique ability to change its electronic appearance at the flick of a switch. Conventional doppelganger plugs have used wire links, this system - like the Datalink - is far neater and easier to use. **M.S.**

M.A.S.T. MEMORY AND STORAGE TECHNOLOGY (UK) LTD

TECHNICAL EXCELLENCE

Important Announcement

"SHOW PRICES AT HOME!"

YES, THE CREATIVE PEOPLE AT MEMORY AND STORAGE TECHNOLOGY, THE COMPANY FAMOUS THROUGHOUT THE WORLD FOR DESIGNING AND MANUFACTURING COMPACT LOWER POWER PERIPHERALS FOR THE AMIGA ANNOUNCE THE ARRIVAL OF A COMPUTER SHOW TO BEAT ALL COMPUTER SHOWS! BUY OUR PRODUCTS AT SHOW PRICES FROM THE COMFORT OF YOUR OWN HOME. BUT ONLY UNTIL NOVEMBER 15TH 1989.

ALL PRICES INCLUDE VAT. NORMAL SELLING PRICES ARE SHOWN IN ()

AMIG-a-TOSH

AMIG-a-TOSH is the MAST Macintosh compatible floppy drive fully compatible with the A-MAX Mac emulator. MAST guarantees its performance with A-MAX.

- SUPERSLIMLINE
- QUALITY FUJITSU DRIVE
- LOW PROFILE
- ONE YEAR WARRANTY

SHOW PRICE £149.99 (£199.95)

FLICK-OFF

A500-A1000-A2000

ELIMINATE
INTERLACE
FLICKER

DTP? CAD?

HI-RES GRAPHICS

FLICK-OFF LETS YOU
EXPLORE THE POSSIBILITIES

- Simple to install
- Requires multi-sync monitor
- Eliminates flicker on all interlace modes including HAM
- Several software options

COMING SOON!

BOING OPTICAL MOUSE

THE HIGHEST QUALITY
PROFESSIONAL MOUSE

- ★ COMPLETE WITH SPECIAL MAT

SHOW PRICE £69.99 (£79.99)

THE COMPLETE AMAX MAC EMULATOR

- ★ 128K ROMS INC.

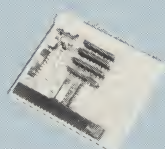
SHOW PRICE £219.99 (£334.90)

"BOOT SELECTOR"

ENABLES BOOTING
FROM DF1:

ONLY £9.99

MICROMECS ULTRA LOW POWER A501 ALTERNATIVE



- BATTERY BACKED CLOCK

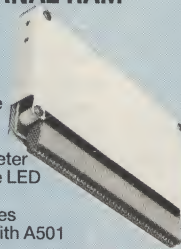
• 512K RAM
HIGH SPEED
LOW POWER
1 MEG DRAM's

SHOW PRICE
£79.99 (£99.99)

MINIMECS UPGRADE
£79.95 EACH 512K
FACTORY OFFER ONLY

MINIMECS 2 MEGABYTES EXTERNAL RAM

- Additional to any memory currently in your system.
- Autoconfigure
- Fast RAM
- Low Power
- Ram Tachometer
- Autoconfigure LED
- Pocket Size
- Zero wait states
- Compatible with A501
- Easily installed



A500/1000

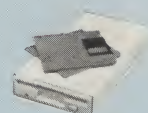
512K £149.95 (£179.95)

1MEG £229.95 (£279.95)

2MEG £369.95 (£479.95)

UNIDRIVE THE ORIGINAL AND BEST

- Fully Compatible
- Quality Fujitsu Mechanism
- Superslimline
- No Clicking
- May be switch disabled
- 1 year limited warranty
- Very low power

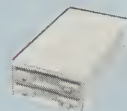


SHOW PRICE £69.99 (£79.95)

"TWINIT" ALLOWS YOU TO
CONNECT TWO DISK DRIVES
WITHOUT THROUGHPUTS
TO YOUR AMIGA ONLY £11.99

TWINDRIVE

- Two quality Fujitsu drives in a slimline case
- No clicking
- Each drive may be switch disabled
- Quiet operation
- Limited one year warranty
- May be powered from the Amiga or from optional 9V DC plugpack at £10



SHOW PRICE £139.99 (£149.95)

TINY TIGER II

MASSIVE MASS STORAGE
30/50/90/136/182 Megabytes
NEW DESIGN

OPTIONAL
2 YEAR
WARRANTY
ON QUALITY
FUJITSU 90, 136, 180 Meg drives.



COMING SOON!

This quality unit has been designed to plug into any Amiga SCSI INTERFACE including THE INFINITY MACHINE, the MAST PARALLEL SCSI INTERFACE (when you want a fast system that is portable between different Amigas), or as a second drive plugged into the additional connector on the FIREBALL A2000 interface. Tiny Tiger feature a front panel SCSI address display, auto power-on with computer, switch selectable SCSI and pass thru. GREAT VALUE.

THE INFINITY MACHINE

Q. DO YOU WANT THE FASTEST
AUTOBOOTING, DMA, SCSI
INTERFACE AVAILABLE?

A. NO PROBLEM - It's included with
the basic module of The Infinity
Machine

Q. NEED LOTS OF MEMORY?

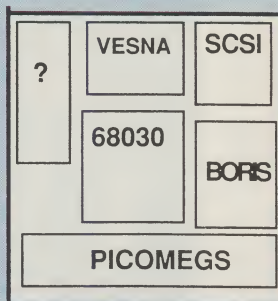
A. Infinity accepts up to 8 megabytes of
RAM. The memory can be selected
as either 16 or 32 bit memory. It can
be used with both the 68000 and
68030. The PICOMECS memory
can run in interleaved mode in most
configurations for even faster
access.

Q. NEED SPEED?

A. NO PROBLEM - you have the choice of a 68000 running at 7 OR 16
MHz in the PICOMECS address space or a 68030 running at 16, 20,
25, 33, 50 MHz.

Q. WHAT ABOUT A2000 OWNERS?

A. In early '90 you will be able to have a machine as fast as an A500 or
A1000 fitted with INFINITY



A500 AND A1000
COMING SOON!

"CHANGE KICKSTART"

AT LAST IT'S POSSIBLE TO CHANGE
KICKSTART AT THE CLICK OF A SWITCH!
THIS SPECIAL UNIT ALLOWS BOTH K/S V1.2
AND V1.3 TO BE FITTED INSIDE YOUR
COMPUTER.

ONLY £29.99 (WITHOUT ROM'S)

ROM's USUALLY AVAILABLE EX-STOCK

"BREAK" FOR THE AMIGA

DO YOU FIND SOME GAMES TOO FAST?
LIKE TO SLOW THEM DOWN?
THIS CLEVER INTERNAL PERIPHERAL
DOES JUST THAT.

- ★ COMPLETE WITH SWITCH
- ★ ADJUSTABLE CONTROL

ONLY £19.99

"AUTOFIRE"

MASS DESTRUCTION OF ALIENS
REQUIRES CONSTANT PRESSING OF THE
JOYSTICK FIRE BUTTON. NO MORE! THIS
CLEVER DEVICE SWITCHES IN AUTOFIRE
AT THE CLICK OF A SWITCH.

- ★ ADJUSTABLE SPEED CONTROL

ONLY £17.99

SPECIAL NOTE: All of the priced items above are regular stock items. Since M.A.S.T. (UK) Ltd., started trading, over 95% of all orders received have been despatched within 24 hours. It is still advisable to telephone for information on availability. Please note that personal cheques have to be cleared prior to despatch of goods. Access, Visa orders welcome. BFPO, Channel Island and Scandinavian customers please deduct 12% from all prices.

PLEASE ADD £5.00 TO EACH ORDER OVER £60 TO COVER THE COST OF 1ST CLASS REGISTERED POST

MEMORY AND STORAGE TECHNOLOGY, INC.

M.A.S.T. (UK) LTD,
Unit 1, Dippen,
Brodict, Arran,
Scotland KA27 8RN.
Tel:(077 082) 234

M.A.S.T. U.S.A.
3881-E Benatar Way,
Chico, CA 95928
Tel:(916) 342-6278

M.A.S.T. AUSTRALIA
19-21 Buckland Street,
Broadway,
NSW 2007,
Tel:(02) 281 7411
Fax:(02) 281 7414

ALL PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

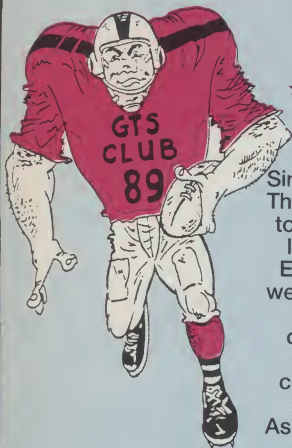
G.T.S.

GEORGE THOMPSON SERVICES

SOFTWARE EXCELLENCE

Presents the all new Christmas PD Bonanza

**** ANNOUNCING ... "GTS CLUB '89 ... ANNOUNCING ****
THE PUBLIC DOMAIN CLUB FOR AMIGA ENTHUSIASTS



- ★ RECEIVE THE LATEST AND THE FINEST PD FROM THE U.S.A. AND EUROPE
- ★ PAY LESS FOR HARDWARE AND SOFTWARE
- ★ TALK TO 'AMIGA ONLY ENTHUSIASTS'

Since the early days of the Amiga, George Thompson Services have made available to Amiga Owners all over the world the latest P.D. disks from the U.S.A. and Europe. Couriers deliver material on a weekly basis to our offices where they are first carefully checked for virus, catalogued and then released to the duplicating rooms for labelling and copying onto top quality Sony DS/DD disks.

As a member of this very Special Club you will not only benefit from lower PD software prices but also discounts on M.A.S.T. and other hardware peripherals.

Send only £15.00 annual subscription now and you'll receive by return:

- ★ Our Double Library Disk Pack detailing the contents of 100's of PD disks. (Please choose any two PD's if you already own these)
- ★ The latest issue of JUMPDISK, the best selling magazine on a disk in the world.
- ★ A new and unique 1 Meg 2 disk animation from the U.S. titled "Wavesail". (Two alternative disks for 512K owners)
- ★ £5.00 PD Discount Voucher. ★ Regular PD News Sheets.
- ★ The opportunity to purchase M.A.S.T. and other hardware at very special prices.

To become a member of "GTS CLUB '89" just send a Cheque (with Bank Card details on reverse), P.O. or place a credit card order using Access/Visa and we will despatch your very special Pack to you immediately!

**** NEW ... NEW ... PD SPECTACULAR VOL I ** £4.49** (£4.49 Members)

Remember Chet Solace and his PD extravaganza disk with 26 programs? Well, Andy Davidson has gone one better with a beautifully presented disk with no less than 40 PD goodies! We regret at this price we cannot provide a list of them - Just enjoy and we will try to persuade Andy to reach the half century in Vol II.

**** NEW ... NEW ... MEGA GAMES PACK VOL III ** £19.99** (£17.99 Members)

Following the incredible response to our first two Mega Games Packs we have carefully sifted through 100's of the very latest programs and packed 7 disks with more of the very best PD games.

**** MEGA GAMES PACK VOL II ** £19.99** (£17.99 Members)

Still available and still high up in the PD top ten. This 7 disk pack includes Adventure, Arcade, Logic, Card, Puzzle, Board and Role Playing Games. Even a Flight Simulator! Please note that these games are all recent releases.

**** NEW ... NEW ... FAMOUS BOARD GAMES VOL I ** £8.99** (£7.99 Members)

Includes Monop..., Clue, Sorry, Checkers and more on three packed disks.

**** THE DE-LUXE PD STARTER PACK ** £19.99** (£17.99 Members)

The perfect introduction to the Amiga owner new to Public Domain. This 10 disk pack includes some of the best material to appear as Public Domain or Shareware. FREE! disk storage box with each order.

**** NEW ... NEW ... "THE BREAKOUT CONSTRUCTION SET ** £4.99** (£4.49 Members)

Besides containing some of the best PD 'Breakout' style games the highlight of this disk is a brand new Shareware release. The Breakout Construction Set has the best design features we have seen in a game of this type. Easy to use, fast to play and beautifully presented. Highly Recommended.

*** JUMPDISK ** JUMPDISK ** JUMPDISK ** JUMPDISK ***



WE'RE PACKED

Contents of this issue filled two disks to start. We crunched, we packed, we tightened, we honed. And now it fits on one disk. You'll find more usable material on this disk than you thought possible.

The theme of the October issue of JUMPDISK is Program/Text File/IFF Picture compression using the very latest techniques. Other programs include **CRAPS**: Superlative version of the famous gambling game with animation and digitized sounds. **SRT**: Replace standard requester messages with your own. **SEAHAVEN DEMO**: Playable demo of excellent Solitaire Game. **VTOT**: Collection of tools and effects that are useful when recording Amiga output onto Video Tape. **POPPALETTE**: Recolour the screen on the fly. **CHARPIC**: Transforms IFF art files to ASCII-rendered graphics, the effect is amazing. **PLUS**: Maze City - Unusual Maze Game, Capture - Challenging board game, Tutorials, News and much, much more. **All for just £8.50 inc.** (£6.99 Members)

**** "DOSLAB" ** £14.99** (£12.99 Members)

Learn how to use the CLI and AmigaDOS the easy way. No heavy manuals, just let the Amiga do the teaching with this interactive two disk set.

**** NEW ... NEW ... STORYBOOK ** £12.99** (£11.49 Members)

An outstanding collection on four disks for children that includes "Charon", beautifully presented with music and graphics, "The Legend of Sleepy Hollow" and "A Christmas Carol" both with speech options and detailed colour prints.

**** NEW ... NEW ... EDUCATION WITH THE AMIGA PT I ** £12.99** (£11.49 Members)

The very best Educational programs we could find are featured in this 5 disk set. Whether it be Evolution, World Geography, Metric Conversion, Astronomy, Elements or Forecasting the Weather - it's on these disks!

**** DESIGN FACTORY ** £8.99** (£7.99 Members)

This 3 disk set includes the finest PD programs we could find for design work. If it's CAD, FRACTALS or MANDELBROT you are interested in this pack is just what you are looking for, Highly Recommended. **STOP PRESS**: Now includes Fish 215 & TBAG 26 Mandelbrot/Fractal programs.

**** NEW ... NEW ... MEDICAL SPECIAL PT I ** £5.99** (£5.49 Members)

Two disks featuring a CT Scanner, the Heart in 3D plus a presentation explaining the effect smoking has on the heart. Beautifully presented with excellent graphics.

**** NEW ... NEW ... THE WORLD OF ASTRONOMY ** £8.99** (£7.99 Members)

Three disks for all Amiga Stargazers. You need only the telescope!

**** HOME BUSINESS PACK ** £19.99** (£17.99 Members)

Our best selling 8 disk pack includes a Word Processor, Spell Checker, Database, Spreadsheet, Appointment Scheduler, Home and Business Accounts and more.

**** NEW ... DTP ACCESSORIES VOL I ** £5.99** (£5.49 Members)

Two disks packed with original Fonts, and the best selection of Clip Art we could find. (CLI)

**** NEW ... NEW ... ICONOGRAPHY ** £8.99** (£7.99 Members)

This 3 disk kit includes everything you are likely to need for Icon management. We've even included a large selection of colourful Icons that you can adapt for your own needs.

**** NEW ... NEW ... K/O THE VIRUS V1.0 ** £4.99** (£4.49 Members)

This disk features the very latest methods of detecting and removing the latest Amiga Virus. Full instructions on disk + "Icon Voucher" allowing you to update for only £1.00 when V2.0 is released.

**** NEW ... NEW ... HARD DISK SPECIAL V1.0 ** £4.99** (£4.49 Members)

This disk features the best Utilities we could find for managing your Hard Disk Drive. Includes a choice of Backup Programs, FixDisk and much more. (CLI)

**** NEW ... NEW ... HAM RADIO SPECIAL ** £12.99** (£11.49 Members)

Five disks packed with programs, text files and pics relating to FAX and HAM Radio.

WE ARE GEORGE THOMPSON SERVICES.

Our address is: **DIPPEN, BRODICK, ARRAN, SCOTLAND, KA27 8RN. (077082) 234.**

Please send a cheque (with your Bank Card No. Expiry Date on reverse), a PO or just telephone your Access or Visa Card details to us before 1pm and we will despatch your order immediately.

VDUs

***Is your monitor a health hazard?
Nancy Picard reports.***

Val Pugh faced a dilemma. As an employee of TSB Bank for several six years, she gradually worked her way up in the system so that she became a technical assistant, a position which involved many hours of on-screen computer use. When she became pregnant, she also became concerned that the emissions from the screen could possibly harm her child. So, she refused to work on the computer, typing reports for people and other duties associated with her job. Instead, she requested - and received - work that allowed her to stay away from computer monitors.

'Some of my co-workers, especially the men, acted a bit funny. There were a few odd remarks, but as I was not happy using the terminal and refused to do the work, there was really nothing they

could say,' she recalled. Val was lucky - she was treated fairly. A case is currently pending involving 51-year-old Urmilla Joshi, a data preparation operator, who quit her job with British Airways claiming premature retirement due to ill health. According to The Financial Times, the legal action could prove a test case of the application of health and safety legislations to the use of visual display units (VDUs).

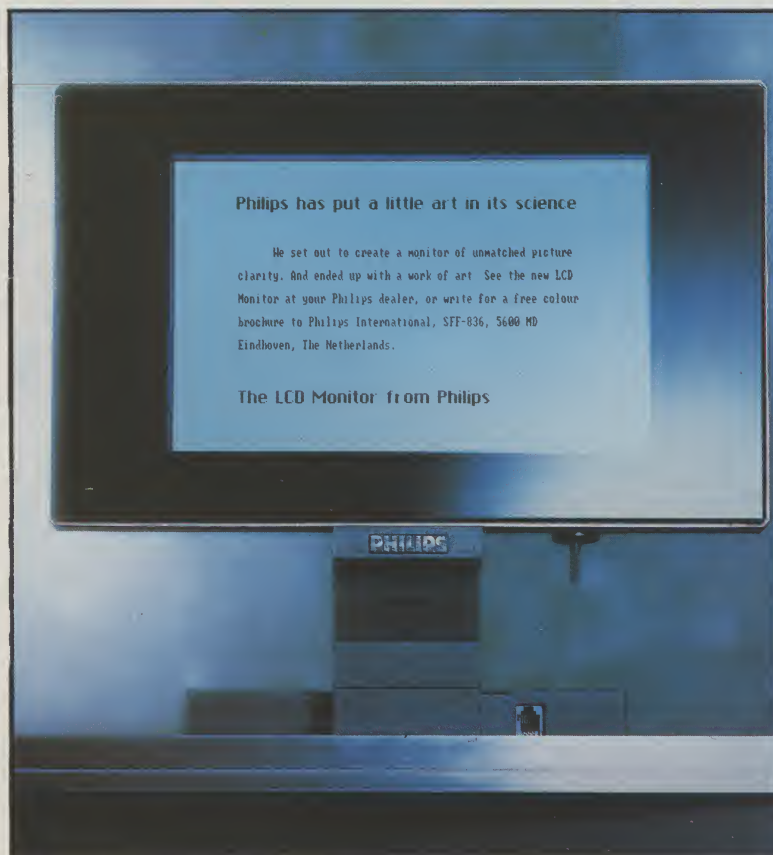
They have yet to force such legislation in Sweden, where there are already strict guidelines for PC vendors of video displays for which no x-rays are allowed and the electrostatic potential must be very close to zero. In addition, the requirements for low frequency electromagnetic fields and sound emissions are also given. Big deal, right?

Wrong. At the back of your monitor,

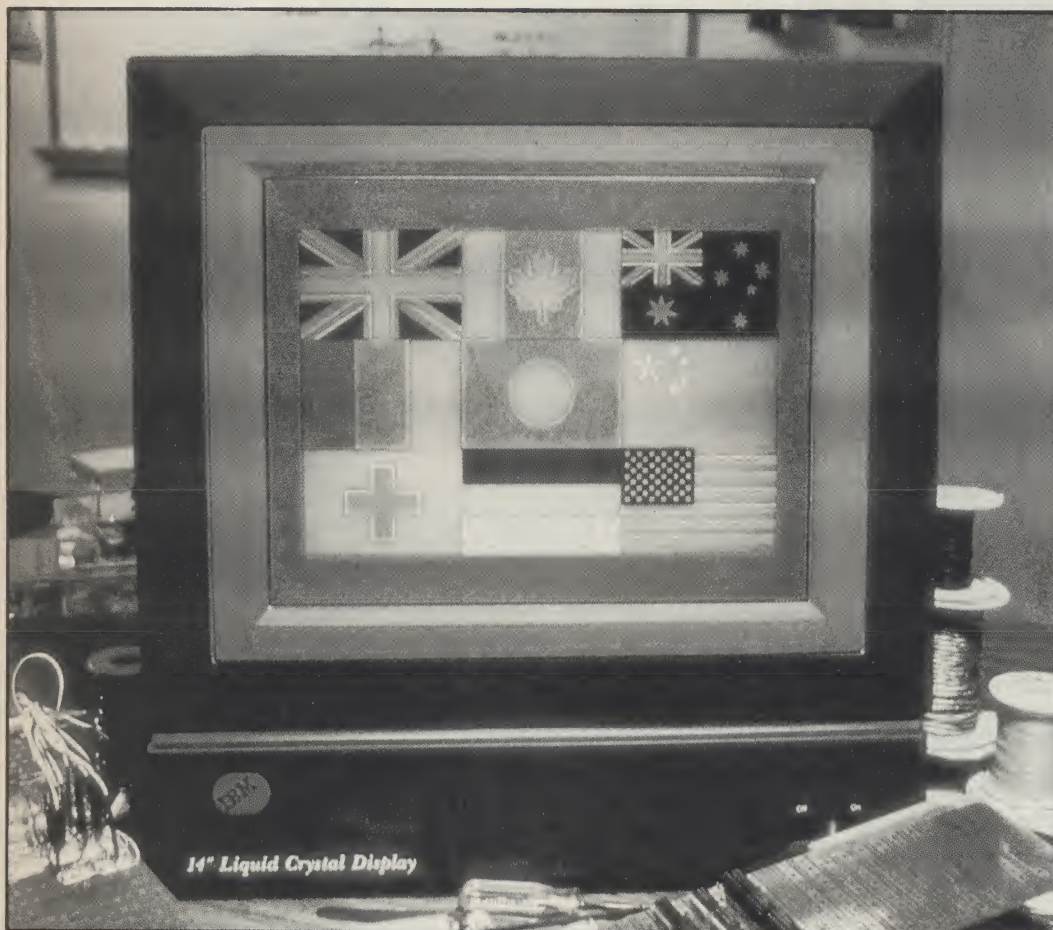
the cathode ray tube fires electrons at a phosphor screen - the result is what appears on your monitor. However, the 'bullets,' which are actually electrons travelling approximately 186,000 miles per second, do not stop at the screen. Instead, they bombard your face and upper chest. There's also evidence that the tube may produce more radiation from the top or front, affecting people not using the terminal.

The tube also produces ultraviolet, x- and radio-frequency waves. Whether or not the amount of radiation produced is harmful has yet to be decisively proven. According to a report published on VDTs by the International Research Association for Newspaper Technology (IFRA), in modern terminals with solid-state constructed circuitry, no x-ray radiation is emitted. However, how many of you are knowledgeable about your monitor or terminal circuitry? Thinking of moving to Sweden yet? It gets better.

Even if direct exposure to some form of radiation is minimized, the dust and dirt that collects on your screen is a result of the electromagnetic static of the electrons, and has been the proven cause of sinus problems, eye infections, and even acne. Flickering, distortion and other defects, including hard to read character fonts, are all causes of fatigue and irritation prone to affecting VDU operators. Does anyone have the name of a good travel agency?



***"LCD MONITORS
Another solution to this
radiation monitor
problem is to trade in
your cathode tube for
an LCD display. Philips
produce an LCD
monitor for PCs and
compatibles, which is
available as MDA/HGC
or CGA (699). The
company plans to
introduce an RGB
converter soon so that
the LCD can be linked
directly into
conventional EGA
ports. A full colour LCD
model with built in VGA
capability will be
released in 1990."***



IBM have joined with Toshiba Corporation to produce a 14.26 inch screen based on active matrix technology. Display Technologies, as the venture is called, will start making 10 inch colour LCDs in April 1991 and move on to the 14 inch size as the production process is smoothed out. The displays switch at 60 frames per second, ideal for Toshiba's flat panel TVs.

COMMERCIAL PRODUCTS AVAILABLE

But before you move to Sweden, or quit your job, there are alternatives. Taxan launched what it claims to be the first UK low radiation monitors, the Supervision 780LR (629) and the Multivision 770 Plus LR (699), designed specifically to achieve low electrostatic and electromagnetic fields. According to the company, it uses a special conductive treatment applied to the CRT surface of its monitors to keep emission values within the maximum recommended by the Swedish National Council of Metrology and Testing, in co-operation with the National Board of Occupational Safety and Health, and the National Institute of Radiation Protection.

Following healthy sales in Sweden (nothing like a good consumer scare to promote profits), Eizo has launched the Z-series of 14in paper white and colour monitors. They claim that their specially designed circuitry counters magnetic screen emitted radiation. The range starts with a mono MDA screen (230), and has several types of monitors, with the highest priced being the multi-scanning VGA (710).

Several other companies are also offering monitors: Hitachi has an Auto 480 LMF model (525); Salora produce a

range of mono and colour versions from the 41BJ 14 to the 445G21 (prices POA); and Expert Graphics have launched the GS10, the most expensive of them all (2,450).

LCD MONITORS

Another solution to this radiation monitor problem is to trade in your cathode tube for an LCD display. Philips produce an LCD monitor for PCs and compatibles, which is available as MDA/HGC or CGA (699). The company plans to introduce an RGB converter soon so that the LCD can be linked directly into conventional EGA ports. A full colour LCD model with built in VGA capability will be released in 1990.

An LCD consists of a film of liquid crystal, an organic material, between two polarising filters. There is a reflector at the bottom of the monitor and a protective sheet at the top. When the electric field is switched on, it twists molecules so that they either reflect or transmit light that falls on them, thus creating an image. Recently, new forms of liquid crystal have taken the name, 'spertwist enmatic,' and backlighting has been added to increase the contrast ratio.

LCDs are popular not only because the power requirements are low, but

also because a similar aspect ratio as with traditional monitors can now be achieved. Working with your LCD monitor is no longer like trying to do wordprocessing on a wristwatch whilst in a dark closet.

These monitors are not to be confused with filtering devices, which only serve to reduce glare and/or to enhance the contrast of the screen. Filters are like apirins - they may be less expensive, but they mask the true problem.

CONCLUSION

The prices of the monitors are not cheap, but they are at least a welcome alternative to the cathode tube. The office environment is strewn with hazards, from the chair on which you sit, to the angle of the monitor, to the office lighting, and even to the wretched coffee in the canteen. The introduction of healthy monitors into the UK is a step in the right direction, rather than a step out of the door of your company, or onto a plane bound for Sweden.

N.P.

Contact: Taxan (UK) Ltd., Tel:(0344) 484646; Eizo (UK) Ltd., Tel:(0483) 757118. Philips Electronics, Tel:(01) 6892166; Hitachi Sales Ltd, Tel:(01) 848 8787; Salora, Tel:(0358) 243011; Expert Graphics, Tel:(0707) 56662.

ProWrite 2.5

An established word processor is dusted off and improved to meet today's challenge: Peter Lee digs below the surface to uncover an old friend

Standing still in the computer business is, relatively speaking, like moving backwards; the competition is always snapping at your heels, and today's success quickly becomes as fresh as yesterday's news.

So there is little wonder that enhancements and upgrades are constantly being released. This is a two-edged sword for the company concerned - they need to keep up with the market, which is evolving all the time, but they risk alienating their original purchasers who gave them their initial success, and who may now feel they bought second best.

Search	
Find...	F
Find Next	N
Change...	

Go To...	G

Hoping to steal a march on the opposition, New Horizons have once again upgraded their successful full-colour graphic wordprocessing package ProWrite with a number of meaty additions. The Texas company is also offering an inexpensive upgrade policy to keep original owners happy.

The program's first enhancements were covered in *AUP's* June '88 issue; but for the benefit of our newer readers, and in the interests of the thorough evaluation we strive to present, a full run-down of major features will be given. But first, the improvements over version 2:

IMPROVEMENTS

ProWrite now has the capability to print near letter quality text and pictures using one pass through the printer. This will only be of benefit to users whose printers support NLQ, but the drawback is that it will prevent them using the program's different typefaces for output.

Text entry and spelling check speed

have been increased - with most documents, a halving of the checking speed is recorded over version 2, especially for users accessing the 100,000 word dictionary from floppy. You may also spell check each word as you type it in (useful only if you have the dictionary in RAM or on a hard disk, or are a very slow typist!).

As far as typing speed is concerned, this is a major advance, considering you will generally be using graphic fonts on screen, which are notoriously slow to display.

Page sizes are now user adjustable, giving scope for such things as address labels or business cards to be designed and printed (when you may want to use the program's skip-over perforation option). The top and bottom page margins may now be turned off, allowing full pages to be used to display text or graphics.

Date and time can be inserted anywhere in the document, to be static - or automatically updated to the current date every time you re-open the document - and with any of the font or colour attributes you have in operation.

Improvements to the Tabs have been made; centered tab stops are available, which is useful for table headings, and formatting control has been included for files with line feeds after each line. Very handy this for stripping the paragraph information which seems to tag onto each line of files downloaded from bulletin boards.

There is now a sentence count for the document in the information requester, as well as the average word length and average sentence length for the document. This is not something one would use a lot, but perhaps some users may find it useful in terms of style correction - to help create short, sharp

Sort Order:	
<input checked="" type="radio"/> A to Z	
<input type="radio"/> Z to A	

Document	
<input checked="" type="checkbox"/> Edit Document	
<input type="checkbox"/> Edit Header	
<input type="checkbox"/> Edit Footer	

<input type="checkbox"/> Show Header	
<input type="checkbox"/> Show Footer	
<input type="checkbox"/> Title Page	

<input type="checkbox"/> Insert	
<input type="checkbox"/> Numbering Style...	

<input type="checkbox"/> Document Info...	
<input type="checkbox"/> Check Spelling...	

snappy sentences.

Finally, cosmetic advances have been introduced to improve the overall appearance and feel of the program (which I thought was quite good to start with). However, the file requesters are tedious in the extreme, requiring the user to cycle through each mounted volume in turn rather than select a specific one from which to load files.

In addition, some menu command key equivalents have been changed, and these, together with other improvements, are detailed in a four-page addendum list currently being shipped with the existing ProWrite manual.

IN USE

ProWrite is a graphic wordprocessor, and consequently features two traits not found in the more commonplace text editors - the ability to include artwork on screen and within your document, and the choice of a number of font styles and sizes for your text.

I am happy that the features which initially attracted me to it have been retained - chief among which is a simplicity of control. The program requires Amigas with a minimum 512K of RAM and works in either high (interlaced) or medium resolution, and can import IFF screens, including HAM images. The trade off against selecting the more humane anti-flickering medium resolution is that your document will not be truly WYSIWYG, as text and illustrations are stretched vertically - but your eyes will thank you for it!

The program can only display eight colours on screen, so a compromise has been reached with regard to printing. After your graphic has been loaded

continued on page 32

Official Secrets

for people who want more £22.00

Confidential 32-page A4 bi-monthly glossy magazine

VALUE £12.00

Confidential is written for people who take their fun seriously. If you are into Adventure, Strategy, FRPs, MUGs, PBMs, D&Ds, or if you would simply like to see more from behind the scenes then Confidential is essential reading. Regular features include Personnel File, Dead Letters, The Man in Black, Feature Articles, Brain Teasers, Diary, News, Competitions, and The Boss Upstairs. Club participation is welcomed.

Gnome Ranger or a surprise alternative!

VALUE £19.95

Gnome Ranger is an award-winning 3-part adventure by Level 9. "Go out and buy Gnome Ranger pronto" said Atari ST User. Or tick the box for Surprise Alternative.

Myth A mini-adventure by Magnetic Scrolls, authors of The Pawn

VALUE £15.00

Written exclusively for members of Official Secrets and, amazingly enough, included in the price of membership. Set in Ancient Greece, you play the part of a young god striving to prove himself worthy of immortality. You'll meet the Ferryman, have a chance to cheat Death, and do battle against the nine-headed Hydra guarding the gates to the Underworld. Myth includes the state-of-the-art Magnetic Scrolls parser and those incredible graphics. For most computers - disk only. Only to members of Official Secrets.

Special Reserve Included in the membership fee

VALUE £5.00

All the features and benefits of Special Reserve membership. See below.

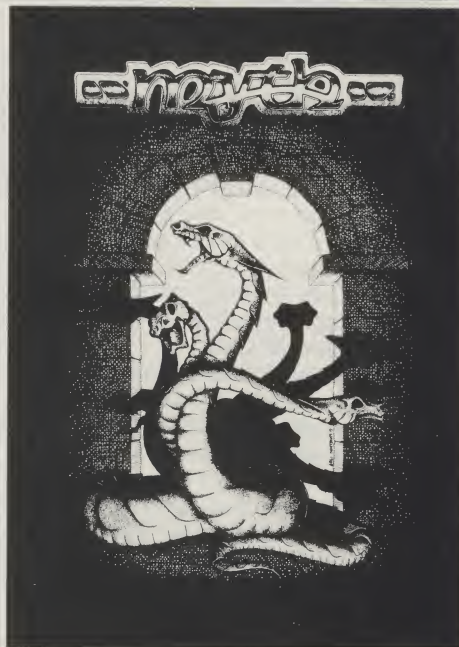
Help-Line Manned each week-day and Sundays

VALUE £5.00

Advice and hints to help you solve most adventure games.

Join Official Secrets for a year. Membership includes 6 issues of Confidential, Gnome Ranger, Myth and Special Reserve, worth a total of £56.95.

And you can save much more on the games you buy. All for just **£22**



MYTH WAS AWARDED A 91% CRASH SMASH BY CRASH MAGAZINE AND WAS RATED 90% BY KEITH CAMPBELL OF COMMODORE USER

Special Reserve

best games at best prices £5.00

Er - and the best service

All the best games, carefully selected and available to members only at truly extraordinary prices. We're miles cheaper than elsewhere. Below are a selection of offers at prices you might not believe. You can buy games at the same time as joining - or join now and select from our catalogue of over 1000 products. There is no obligation to buy anything. All items advertised are only available to members and are subject to availability.

Club Privileges

All club members benefit from our low prices and:

- Bi-monthly Buyer's Guide each with details of 40 games, building to a valued reference.
- Membership card with privilege number, and folder for the Buyer's Guides.
- 24-hour despatch of stock items. Over 700 lines in stock.
- Each game sent individually by 1st class post. Most will fit through your letter-box.
- 7-day sales hotline, open until 8pm weekdays, 10 to 5.30 Saturdays, 11 to 5 Sundays.
- Written notification and instant refunds on request in the event of unexpected delays.
- No commitment, no obligation to buy anything and no "minimum purchase".

Miscellaneous

AMIGA 500 COMPUTER + 559.99
PHILIPS 8833 MONITOR
AMIGA 512K RAM UPGRADE 129.99
GENUINE ITEM WITH CLOCK
MONITOR STAND 19.99
FITS OVER AMIGA OR ATARI ST
TWO PLAYER LEAD 8.99
FOR POPULOUS OR FALCON (NULL MODEM)
DUNGEON MASTER SOLUTION BOOK 2.50

AMIGA UTILITIES

C-LIGHT (3-D ANIMATION + DRAWING)31.49
DELUXE MUSIC CONSTRUCTION SET46.47
DELUXE PAINT III51.49
KIND WORDS 2.0 (WORD PROCESSOR)31.49
PHOTON PAINT10.99
PHOTON PAINT 2.0 (NEEDS 1 MEG)49.99
PRO SOUND GOLD (INCL HARDWARE)51.45
PROTEXT WORD PROCESSOR64.99
PUBLISHERS CHOICE (NEEDS 1 MEG)66.49
SHOOT 'EM-UP CONSTRUCTION KIT18.49
TALESPIN ADVENTURE CREATOR18.49
WORKBENCH 1.313.49

SONY 3.5" 79p
DS/DD DISKS

Amiga games

3D POOL15.49
A.P.B.12.99
ACTION FIGHTER15.99
AFTERBURNER15.49
ARCHIPELAGOS15.49
ARTHUR (INFOCOM)16.49
BAD COMPANY12.49
BALANCE OF POWER 1990/15.99
BALLISTIX12.49
BANKOK KNIGHTS15.99
BARBARIAN 2 (PALACE)18.49
BARBARIAN 2 (PSYGNOSIS)15.49
BARD'S TALE 17.99
BARD'S TALE 216.47
BATMAN CAPE CRUSADER15.49
BATMAN THE MOVIE15.99
BATTLECHESS15.99
BATTLETECH15.99
BEACH VOLLEY15.99
BEYOND DARK CASTLE15.99
BLADE WARRIOR15.99
BLOOD MONEY14.49
BLOODWYCH15.49
BRIDGE PLAYER 215018.49
CABAL15.49
CAPTAIN BLOOD8.49
CASTLE WARRIOR15.49
CHAMP (USA) FOOTBALL5.49
CHESS PLAYER 215015.99
CHICAGO 9012.49
COLLOSUS CHESS X15.49
CONFLICT EUROPE16.49
CORRUPTION15.49
DARK SIDE16.49
DATA STORM12.49
DEFEND OF THE CROWN8.49
DEJA VU12.49
DEJA VU 215.99
DENARIS13.49
DRAGON SPIRIT12.99
DRAGON'S LAIR (1 MEG)28.49
DRACKHEN16.99
DUNGEON MASTER (1 MEG)15.49
DUNGEON MASTER EDITOR7.49
DYNAMITE DUX15.99
ELITE13.49
EMPIRE15.99
EYE OF HORUS15.99
F-16 COMBAT PILOT15.49
F-16 FALCON18.49
FALCON MISSION DISK12.99
FAERY TALE13.99
FANTAVISION26.49
FED OF FREE TRADERS19.49
FERRARI FORMULA 116.47
FIENDISH FREDS BIG TOP 17.99
FIRE BRIGADE (1 MEG)18.49
FISH!15.49
FLIGHT SIMULATOR 225.49
FOOTBALL MANAGER 28.49
FM 2 EXPANSION KIT6.49
FUN SCHOOL 2 (6-8)12.49
FUN SCHOOL 2 (OVER 8)12.49
FUN SCHOOL 2 (UP TO 6)12.49
GOLD RUSH!11.49

GRAND MONSTER SLAM12.99
GRAND PRIX CIRCUIT16.49
GRIDIRON (U.S. FOOTBALL)14.99
GUILD OF THIEVES15.49
HELLFIRE ATTACK4.99
HEWSON PREMIER COLL16.99
HIGHWAY PATROL14.49
HIT DISKS VOLUME 29.49
HONDA RVF 75015.49
HYBRIS8.49
INDIANA JONES (ACTION)13.99
INDIANA JONES (ADV)17.49
INFESTATION14.99
INTERPHASE15.99
IVANHOE15.99
JACK NICKLAUS GOLF15.99
JOURNEY15.49
JOURNEY18.49
KARTING GRAND PRIX4.49
KEES THE THIEF16.99
KICK OFF12.99
KING OF CHICAGO8.49
KNIGHTFORCE14.49
KRISTAL9.99
KOURNEY12.49
LANCELOT12.49
LAST NINJA 215.99
LAZER SQUAD12.99
LEADERBOARD BIRDIE16.49
LEATHERNECKS6.49
LEISURE SUIT LARRY 111.49
LEISURE SUIT LARRY 218.49
LEONARDO13.49
LIGHT FORCE15.99
LOMBARD RAC RALLY14.49
LORDS OF THE RISING SUN18.49
MATRIX MARAUDERS12.49
MICROPROSE SOCCER15.99
MILLENNIUM 2.215.99
MR HELL15.99
NEVER MIND'S G.P.4.99
NIGEL MANSELL'S G.P.12.49
NORTH AND SOUTH15.99
PACLAND7.49
PACMANIA6.49
PASSING SHOT15.99
PAUL GASGOINE SOCCER14.49
PAWN15.49
PERSONAL NIGHTMARE18.49
PHANTOM FIGHTER4.99
POLICE QUEST 115.99
POPULOUS16.49
POPUL PROMISED LANDS7.99
POWER DRIFT15.99
POWERDRONE16.47
PRECIOUS METAL COLL.15.49
PREDATOR15.99
PURPLE SATURN DAY8.49
QUARTERBACK12.49
R-TYPE9.99
RAINBOW WARRIOR15.99
RED LIGHTNING19.99
RICK DANGEROUS15.49
ROBOCOP15.49
ROCKET RANGER9.99
RUNNING MAN7.49
SCRABBLE DE LUXE12.49
SHADOW OF THE BEAST19.99
SHADOWGATE7.49
SHINOBI12.49
SHOGUN18.49
SEUCK18.49
SILKWORM12.49
SILPHEED15.99
SIM CITY17.49
SPACE QUEST 19.49
SPACE QUEST 212.49
SPEEDBALL15.49
SPHERICAL12.99
STEVE DAVIS SNOOKER12.49
STRIKE FORCE HARRIER5.49
STRYX12.49
STUNT CAR15.99
SUPER HANG ON15.49
SWORD OF SODAN13.99
SWORDS OF TWILIGHT16.49
TEENAGE QUEEN8.49
TESTDRIVE 2 - THE DUEL19.49
TETRIS4.49
THE NEW ZEALAND STORY15.99
THREE STOOGES6.99
THUNDERBIRDS8.49
TIME & MAGIK12.49
TIME BANDIT6.99
TRIAD VOL 19.49
TRIAD VOL 214.99
TURBO12.99
TV SPORTS FOOTBALL13.49
UNIVERSAL MIL SIM14.99
VIXEN3.49
WAR IN MIDDLE EARTH14.99
WATERLOO15.99
WAYNE GRETZKY HOCKEY17.49
WHO FRAMED9.49
ROGER RABBIT (1 MEG)15.49
XENON II, MEGABLAST15.99
XENOPHOBIA15.99
XYBOTS12.99
ZORK ZERO18.49

To order please write, or complete the coupon, or telephone us on 0279 600204. Please note that there is a surcharge of 50p per game for orders placed by telephone.

Order Form

Non-members please add the membership fee

Name

Address

Post Code

Phone No.

Computer

*5.25"/*3.5"/*3.0"/TAPE

Payable to: **Special Reserve or Official Secrets**
P.O. Box 847, Harlow, CM21 9PH

Special Reserve and Official Secrets are trading names of Inter-Mediate Ltd.
Reg. Office: 2 South Block, The Maltings, Sawbridgeworth, Herts CM21 9PG.
Registered in England Number 2054713. VAT reg. no. 424 8532 51

Special Reserve membership £5 UK, £6 EEC or £7 World

or

Official Secrets membership £22 UK, £25 EEC or £30 World

with Gnome Ranger and Myth

or with Surprise Alternative and Myth

Item

AUI

Item

TOTAL

Credit card expiry date

*CHEQUE/*POSTAL ORDER/*ACCESS/*VISA

(Including Connect, Mastercard and Eurocard)

*Delete where applicable

Overseas orders must be paid by credit card

Prices include UK Postage and Packing

EEC orders please add 70p per item

World orders please add £1.50 per item

TEST DRIVE

continued from page 30

in, ProWrite converts the image the best way it can for accurate printing on a colour printer. This includes a user-definable amount of dithering to suit the work, and the option of a black and white translation of the image.

Once loaded, pictures can be cut, copied and pasted much like text, with the bonus of a re-size function. In use this sometimes led to uncomfortable results as pixels tended to create interference-like patterns once a graphic's ratio was altered.

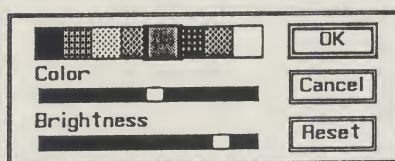
Text styles can be altered by loading in a different typeface from your current font directory. A pleasant enough array of styles comes with the program, but I had no trouble in loading in the many styles I routinely use, including some massive ones. Text attributes - colour, bold and italic styles - can be altered on existing text after it has been highlighted, or invoked for each new section of the document as and when needed.

The program incorporates all the functions of the standard text editor, and handles the more sophisticated aspects such as spell checking in a friendly and simple way.

Mail-merge is also accommodated, allowing the duplication and personalisation of a single document to many people, whose details (name and address) are held on a merge data file and incorporated at the time of printing.

The system files which accompany the programs on a separate disk include the by-now standard 1.3 Preference printers, which have done a lot to improve output quality and which I found worked extremely well with varied fonts and images. Black and white on my Epson 80 was crisp, and using my Okimate 20 printer produced excellent colours on text, but sometimes had me scuttling back to Deluxe Paint to alter some colours of an original art screen which were not translated well by ProWrite.

If you want a quick printout of your document, you can over-ride on-screen fonts and do a draft dump, which uses the printer's own typestyle and excludes graphics.



CONCLUSION

It is a major luxury I know, but I do find a need for two distinct type of word processor. I require a simple text editor for business, where I use Transcript, and something a little special for graphic printing (for invitations, signs and so on). I have to admit that I would not consider using ProWrite as my main

Edit

Cut X
Copy C
Paste V
Erase

Copy Format
Paste Format

Select All A

Show Ruler

work tool - I am something of a traditionalist in that respect - though I am sure it is capable of doing the job; but it will easily earn its keep as a simple-to-use and feature-packed graphic text utility. I liked the program when it - and I - was a little younger, and at least ProWrite, with continuing development and improvement, has improved with age...

P.L.

Upgrades - \$20 to all registered ProWrite 2.0 owners, and \$30 to all registered ProWrite 1 and 1.1 owners (add \$5 pp). Available from New Horizons Software Inc. PO Box 43167, Austin, Texas 78745, USA.

UK Contact: Digipro Ltd., Enterprise House, Howards Grove, Shirley, Southampton, SO1 5PR. Tel. 0703-702743

SORRY! THE WORLD IS OUR LIMIT!



AMIGA SOFTWARE

YOU NAME IT, WE'VE GOT IT (OR CAN GET IT PRETTY QUICKLY) FROM THE LATEST GAMES TO THE NEWEST GRAPHICS PROGRAMS. BENEFIT FROM THE BUYING POWER OF THE WORLD'S LARGEST AMIGA MARKET.

PUBLIC DOMAIN

WELL OVER 1000 DISKS IN STOCK (FISH, RPD, PANORAMA, TBAG, KICKSTART) £2/US\$3 PER DISK.

3.5 DS/DD DISKS

TOP QUALITY & GUARANTEED OF COURSE. 70P / US\$ 1.05 EACH. (OVER 100 60P / 90C EACH)

ALL OUR PRICES INCLUDE POSTAGE & PACKING WITHIN EUROPE. OUTSIDE EUROPE PLEASE ADD 10% OF VALUE OF ORDER (MINIMUM £3 / US\$4.50) TO COVER AIRMAIL POSTAGE. ALL MAJOR CREDIT CARDS ACCEPTED (EURO, VISA, ACCESS, AMEX, DINERS, JCB, MASTERCARD)

WE GUARANTEE TO ANSWER ALL ENQUIRIES PROMPTLY & EFFICIENTLY. PLEASE FEEL FREE TO WRITE IN ANY OF THE FOLLOWING LANGUAGES: GERMAN, ENGLISH, FRENCH, PORTUGUESE, SPANISH.

GRENVILLE TRADING & IMPORT - INTERNATIONAL AMIGA SERVICE

ZIMMERSMÜHLENWEG 73
D-6370 OBERURSEL
WEST GERMANY

TEL: (+49) 6171 73048
FAX: (+49) 6171 8302



GTI

Now You Don't Need a Postscript Laser Printer to use Professional Page

Introducing Professional Page V1.3 with Compugraphic outline fonts.

You can now use Gold Disk's *Professional Page* and output to non-PostScript laser printers, and inkjet or inexpensive 9-pin dot matrix printers, with remarkable results – smooth fonts, jaggie-free lines, and brilliant colour.

Gold Disk has brought AGFA Compugraphic's Intellifont technology to the Amiga. You can now use Gold Disk's *Professional Page* with high quality fonts and output your pages to any printer at its maximum resolution.

And, because *Professional Page* uses AGFA Compugraphic fonts, you are guaranteed professional quality type every time. AGFA Compugraphic is the world's largest supplier of electronic publishing equipment and with over 1,700 typefaces boasts one of the world's largest collections of professional quality fonts.

With Gold Disk's proprietary font caching system, you not only get smooth looking fonts on output but also on screen where fonts are created on the fly – at any size.

Professional Page users can still enjoy the high level of reliability and the powerful yet easy-to-use capabilities that have made this program a must for serious desktop publishers. Precision typography, unparalleled graphic control and colour separation are standard features.

To help you create smooth graphics nothing

beats *Professional Draw*. The smoothness and precision of the images you create are limited only by the printer's resolution. There's a powerful assortment of geometric and freehand drawing tools. Unlimited colour. Enter type (fonts are included) and then stretch, twist, re-draw, or colour. Print or colour separate your work on numerous printers, or bring these graphics into *Professional Page*.

Plus, to help you take advantage of *Professional Page*'s design capabilities, Gold Disk offers a package of easy-to-use templates. Designed by a top art director, these layouts have built-in type specs – just flow the copy and print. There's a disk of structured clipart for use in *Professional Page* or *Professional Draw*. This collection of common symbols, maps, and other images is great for use in colour or black and white.

Call your dealer NOW. If you take desktop publishing seriously, this is the product for you.

OUTPUT AT FULL RESOLUTION TO PREFERENCES DEVICES INCLUDING THESE POPULAR PRINTERS

- HP Paintjet • HP Laserjet • Okidata 2931
- NEC P2200 • HP Deskjet • Canon PJ1080A
- Okimate 20 • Xerox 4020 • Epson X
- Any graphics-capable Preferences printer

Did You Know

... That *Professional Page* was voted *Best Buy* by *Computer Buyers Guide* over PageMaker and Ventura Publisher – two Mac and IBM heavyweights.
... That several popular magazines are produced entirely with *Professional Page* using its sophisticated typographic and image handling controls and superb colour separation features.
... That 8.6 out of every 10 Amiga desktop publishers use *Professional Page* and other Gold Disk products. Plus, PageSetter owners upgrade at a major discount. Call us!

Professional Page V1.3 has a suggested price of £249.95. Requires: Single drive 1 Meg Amiga. Extra memory and drives recommended.

Distributed by: HB Marketing Ltd, Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ. Tel 0895 444433

PAGESTREAM & PAGESITTER
OWNERS – PHONE FOR DETAILS OF
AN UPGRADE

AMIGA ART

APPLE

An excellent example of the stunning effect of blurring. This superb still life creates a highly realistic picture. It also displays beautiful shading. The benefits of blurring can be seen by comparing the actual apple with its accompanying leaf. The former has beautifully smooth edges and no visible pixels; in comparison the



leaf is starkly unshaded and shows a somewhat rough edge. Considering that Deluxe Paint III only allows 64 colours on screen at any one time, I guess that Andre ran out of available colours. The one problem with blurring is that it is expensive in colour usage. I personally think that the addition of the lower quality stark leaf detracts from the apple's soft beauty.

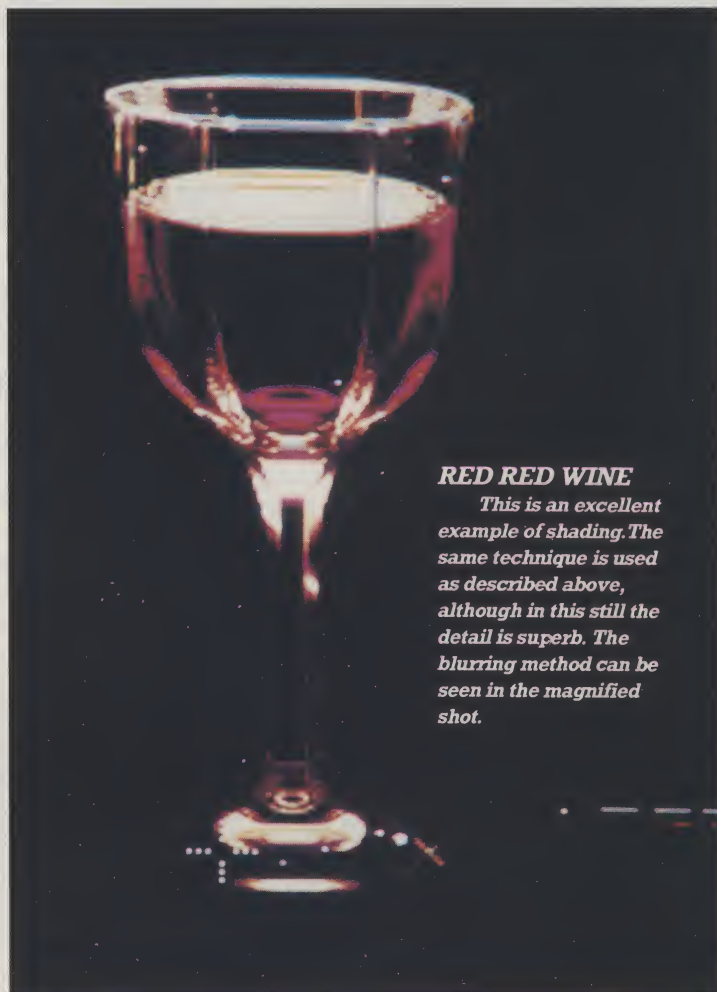
Carrie Beecroft examines how André Alexander, an Australian graphic artist, is setting new standards for Amiga artwork

Yes, I was fooled too. But this is not some late discovery of a long lost art treasure, although you could be excused for thinking such. Rather this is the latest in Amiga graphics brought to you courtesy of a highly talented Australian graphic artist called André Alexander. Oh, and yes, it is all done the computer, and it is pretty phenomenal.

Alexander is responsible for the graphic art set-up "Studio Evolution" which is based in Victoria, Australia. He has produced this fantastic Amiga artwork without resorting to mega-expensive equipment; all these graphics have been created by drawing directly onto the monitor screen with the mouse. No digitising equipment or graphics tablet were employed. The graphics are produced in both low and high resolution and can be run as a slideshow using Zuma TV Show, or can be loaded into Deluxe Paint III.

André informs us that he acquired his first Amiga only two years ago and already is producing work of this outstanding calibre. He now works with an A1000, A2000b and an A2500. His output devices consist of a Commodore MCS820 thermal colour printer, a Polaroid Palette System and a modem. He is hoping to add a digitiser and a framegrabber to his technical stable.

The examples we are publishing this month



RED RED WINE

This is an excellent example of shading. The same technique is used as described above, although in this still the detail is superb. The blurring method can be seen in the magnified shot.



LADY A

The majority of this picture has been created using individual strokes of the mouse. However, as can be seen from the hair, The blurring technique has been used to fill in background colour. This effect is used predominantly through André's work to create the highly realistic borders. Colour blending is used to prevent the pixel edges from being glaringly obvious and thus giving the game away as to the medium through which the pictures were created. Being complete with excellent blending and graphic detail, this sensitive still must be one of André's best.

show that with talent and your amazing Amiga coupled there is no end to what can be achieved.

André has mentioned that he is in the process of stringing some animations together. Judging from the quality of the stills, those animations will have to be seen to be believed. Check out future editions of *AUI* for a report.

André used *Deluxe Paint III* to create these stills. This works on a resolution mode where *Photon Paint* operates using *HAM* (Hold and Modify). Both packages allow a selection of colours from a palette of a total 4096 colours. However, in the *Deluxe Paint III* package, only 64 colours from the total palette may be on the screen at any one time. Mode, as many of you

will already know, is defined by the resolution and the amount of colours used.

André also is the lucky owner of a *Polaroid Palette* which allows him to produce photographs directly through the computer. Needless to say, the quality of these shots are outstanding.

My personal favourites being *Lady A* and the apple for their realistic image, superb shading and soft appearance. Thank you, André, for extending our view as to the ability of the amazing Amiga!

C.B.

For more details contact André Alexander at: *Studio Evolution Pty.Ltd.*, 7 Vistaway Court, Donvale 3111, Victoria, Australia. Tel: Australia 03 842 5957.

CAR

What other than a Ferrari Testarossa! André has employed interlace mode for this one which doubles the vertical resolution by inputting in an extra line be-

tween the existing verticals. This makes the pixels half as thin vertically allowing smoother edges. Compare the bonnet slope to the wheels- the bonnet edge

is much smoother as it exploits the doubled vertical resolution. The wheels on the other hand rely on the horizontal resolution which remains unchanged.

Plainly speaking, this means that the bonnet edge is moving down in pixels which are half as wide as the wheel pixels; thus allowing for heightened clarity.



THE PERSONAL COMPUTER SHOW

The biggest consumer computer event of the year has just taken place at London's Earls Court Exhibition Centre. **AUI** sent a team to cover the multiple attractions of business, productivity and home computing displayed there. Anthony Mael, Carrie Beecroft, Simon Power and (on pages 73, 74, 75 and 76) Tony Horgan report.

Commodore again had an action packed stand at the PC Show where the star attractions were the Christmas bundles for the Amiga 500 and the Commodore C64. Based on the "Batman the Movie" game from the games market leaders Ocean, this is the first time in the history of leisure computing, says CBM, that a major game has been bundled with a computer and launched to the public at the same time. In the pack too comes the highly acclaimed Deluxe Paint II and the successful flight simulator F-16 Interceptor - both from Electronic Arts. For Arcade fans, Commodore have also included The New Zealand story from Ocean. This Batman pack will no doubt ensure that the Amiga 500 continues to enhance Commodore's leading position in the market. The Amiga 500 Batman Pack is priced at £399.00 and will be available by the time this magazine reaches you.

Commodore are also tripping the Light Fantastic with their new package for the C64. Together with the Commodore C64, the Light Fantastic pack includes a 1530 Dataset, a Cheetah 3-D light gun called The Defender, 3-D glas-

ses plus Time Traveller, Gangster and Army Days- three specially developed Mindscape games- Blaze Out from Ocean, Mike Read's Pop Quiz, & Batman the Caped Crusader, also from Ocean. Educationally the pack offers Pitman Typing Tutor, Music Package, Paint Package, and an Arcade Construction kit from Domark. The Light Fantastic offers an excellent product mix bringing exclusive software to the market and further expanding the everlasting appeal of the Commodore C64. Retailing at £149.99 for the pack, or £39.99 for the software alone, no doubt the Light Fantastic Pack will be the biggest selling 8-bit product this Christmas. Commodore have always made clear their commitment to the leisure industry, and also their concentration on the younger generation, at least in terms of the A500 and the C64. Both the new Christmas packs indicate that computing for the younger generation is still a priority, although with the addition of the creative and educational software it appears that Commodore is aiming at a more general family appeal. Shoot 'em up games are, after all, not included in most parental priorities.

Commodore therefore hopes to control the games market, but what of the other computer areas such as education and business? Here it is recognised that the hardware that makes the Amiga the best games machine in the world is the platform which also makes it an excellent machine for other purposes. There, however, it is the A2000 that really comes into its element.

At the PC Show, the three most exciting developments in the Commodore field were respectively research, education and business centred. The most dramatic development involving the Amiga was the invention of a 4-D ultra-sound heart scanner which uses time as the fourth dimension in order to create an animated image of the heart for medical diagnostics. The high resolution graphics and other advantages of the Amiga 2000 make it the ideal vehicle for this exciting and important research. Harold Wilson, the guy responsible for the scanners creation, is a medical engineer from Imperial College, London (and no, he never was Prime Minister) was at the Show to give me a run through of the operating principles. Essentially, these are quite straight for-



ward and depend on the high resolution graphics, open access system, multitasking and multiprocessing. There are many important benefits of this newly developed scanner, which incidentally won the 1989 National Westminster Bank/ BP Award for Technology despite the fact that the project had only been running for one year. Present ultra-sound scanners run on 2 dimensional scans which rely on cross sections of the heart. The new Amiga equipment can take a 4-D animated scan of the heart, making it easier to detect abnormalities in the heart structure and in blood flow. The scanner could also be adapted for brain scanning with the addition of X-Ray equipment, and may also prove useful in the detection of cancer cells and related follow up treatments. One final point; the Amiga scanner, including software, can sell for around £25,000 compared to £80,000 for present scanning equipment.

Another interesting development on the Commodore stand was the Training and Presentation system produced by Computerised Training Systems. This interactive, integrated system puts the presenter in control of information technology designed to achieve maximum effectiveness. Audio, video, live sound and pictures, slides and overheads are all fed into the computer and controlled by the presenter by moving the mouse. The Amiga was the ideal computing tool because of the high quality graphics, large memory capability, open access system, multiprocessing capability, and of course, economy. A program for children has also been developed which involves slides and an accompanying voice.

The system is very simple to operate and thus allows trainers to concentrate on their training rather than production. The system can be extended to a comprehensive student system if required, allowing students to develop in depth knowledge and skills at their own pace.

On the business front the Small Business Manager is a stand alone, easy-to-use software system comprising 5 essential business packages. The Options package allows you to enter your company details, VAT rate and

other details particular to your hardware configuration. The Invoices package allows access to customer/ delivery database and produces invoices, copy notes and credit notes. The Stockbook produces lists of stock and is informed from the invoices package of any items bought and sold. The Statements package produces a full customer ledger and statements. The VATbook stores inputs/outputs information. This Small Business Manager requires an Amiga 500 as the minimum system and at £99.00 is financially accessible to all small businesses.

Causing quite a sensation on the Commodore PC was a famous MSDos package on a large and terrifically clear monitor, showing two A4 pages at the same time, and proudly bearing a Commodore badge. Aldus Pagemaker 3, the Desktop publishing package, together with the new Aiden 21 inch high resolution monitor, gave some impressive results. However, at £2388 for the monitor, it was not one for the uncommitted.

The Amiga graphics were of their usual outstanding quality, with demonstrations of DigiPaint being even more impressive on the high res. monitors.

With the most impressive stand at the show, including a private theatre where you could see everything on a constant programme, including The Bitmap Brothers of Xenon fame, it was altogether an excellent showing for Commodore. In terms of exciting new developments, the general opinion was that they had left their competitors behind, their massive two floor stand emphasizing their leadership of a wide area of the hardware market. CB

PC SHOW ROUND UP...

Simon Power whizzes round the packed stands

The 1989 PC Show is said to have been the largest one yet in both the number of exhibitors and the number of visitors attending. With so many trade stands and so many new products on show it was practically impossible to have a good look at everything. I'm sure I must have missed many an interesting gadget or game being shown off.

The Central hall contained most of the large companies including the Commodore stand. Commodore launched their "Class of the 90's" educational package at the show which includes among other things, an Amiga 500, De-

luxe Paint II and a copy of this magazine. To help schools in their mastering of the package Commodore have invested 500,000 in an educational team who will tour the school offering help and advice.

Granada Microcare who officially maintain all Commodore computers on behalf of CBM were present at the show. Granada have recently been involved in Commodore's announcement that all its PCs sold from now on will carry a one year maintenance free warranty.

Kuma Computers Ltd. had a variety of titles on show at the stand covering topics on the PC and Amiga. A special

promotion was being held for their new K-Roget disk based Thesaurus. A review of which will shortly appear in AUI. A special price of 29.95 was being offered, usually the thesaurus costs £49.95.

The Computer Users Book Club which offers members a 25% discount on all titles were at the show displaying a variety of their new books. Membership to this club is free, and all books are dispatched first class as soon as the order is received.

The Business hall was where one could find the best professional software and hardware available. Marconi Electric Devices launched their KB35 trackerball at the show. Available for the Amiga and PC the trackerball will assist in educational programs as well as intricate graphic design work. Priced at around £150, the trackerball should soon be appearing in many offices and schools around the country.

Wordperfect UK who recently changed their name (to Wordperfect!) had Wordperfect for the Amiga and PC. Wordperfect were running regular style presentations showing Data perfect, their Wordperfect office and PlanPerfect for the PC.

John Wiley and Sons Ltd has a range of books covering various Amiga topics. Wiley's books are known for the practical way in which they deal with complicated subject matter.

Equinox Business Systems had their business software being put through its paces. The Equinox Organisation which is said by Equinox to have a wider scope than most organiser packages was also being shown, and is available for the PC.

The Bank of Scotland and the Royal Bank of Scotland both had their home banking units on display. The Home and Office Banking Service (HOBBS), which belongs to the Bank of Scotland, functions with most PCs and has the ability to instruct payment to third parties and facilities to transfer funds between accounts on a same day basis. The Royal Bank of Scotland launched their unit two years ago. Named Royline, it offers the same facilities as the Bank of Scotland but claims to be growing at a faster rate than any of the top four banks.

PET computer services, who are based in Singapore, and have absolutely nothing to do with the PET, were at the show wishing to meet distributors, importers and buyers who might be interested in purchasing their 'Sherry' range of DTP packages. Why they are called 'PET' and not 'SHERRY', nobody seems to know!

The Leisure Hall contained most of the big names in entertainment. Ocean made good use of their allocated space by erecting a large video screen to

promote their new releases. Batman was without the game that people came to see, and Ocean had supplied two 1950s Cadillacs to set the scene.

Domark, whose latest release Trivial Pursuit (featured on page 40 of this AUI) looks set to make a big hit with the computer board game players. Fantavision, Broderbund's animation package, also attracted a large crowd around the monitor running in its dome. Fantavision has recently been upgraded for the Amiga.

CDS had a new striptease game at the Show, as well as their latest chess program - Collossus Chess X - CDS call this the 'Ultimate Chess Program' - They will probably say the same for XI... Accolade were also present, along with Rainbow Arts, Gremlin Graphics, Ubisoft, Virgin, Activision, Titus and U.S. Gold to name but a few.

Various oddities could be noted at the Show including the Red Star stand. We know Red Star offer a delivery service using the rail network, but as for their reason for being at the PC Show, nobody could tell. The Encyclopaedia Britannica also had a stand at the Show. Maybe a computer version was available? Maybe a computer version was planned? Alas, no. The Encyclopaedia Britannica will in the mean time stay in its paper form. Just another of the mysteries that the huge show failed to solve.

S.P.

SOFTMACHINE

AMIGA HARDWARE

AMIGA 500 PACK 1

Amiga 500 (1.3 ROM)
Mouse + P.S.U.
Modulator + Leads
Workbench 1.3
Basic 1.3 + Extras
The Very First Tutorial
Introduction to the Amiga
500 WB1.3 Supplement
Amiga Basic
£358.99

AMIGA 500 PACK 2

Pack 1 plus the following:
Ikari Warriors + Insanity Fight
Mercenary 1 + Art of Chess
Terrorbirds + Thundercats
Barbarian + Buggy Boy
Amegas + Wizball
Photon Paint
£379.99

SOFTMACHINE STARTER PACK

Mouse Mat
Mouse Bracket
10 SONY MF2DD Disks
80 Capacity Disk Storage Box
3.5" Head Cleaner
A500 Dust Cover
ONLY £25*

*When purchased with any Amiga computer... Offer limited to 1 starter pack per Amiga purchased!

ALL PRICES INCLUDE V.A.T. AND DELIVERY (U.K. ONLY)

Courier/Overseas rates on request

SEE NEXT MONTH'S AMIGA USER FOR PERIPHERALS / ACCESSORIES / BOOKS.

A2000 SYSTEM 1

Amiga 2000
A1084S Monitor
A2090 20Mb Hard Drive
PHONE - While stocks last!

A2000 SYSTEM 2

Amiga 2000
A1084S Monitor
A2088 PC-XT Bridgeboard
A2092 20Mb MS-DOS Hard Drive
PHONE - While stocks last!

Amiga 500 + A1084S £599.99
A590 20Mb Hard Drive £358.99
A501 Ram £23.99
Expansion/Clock £131.99
A520 Modulator £23.99
MPS1230 Printer £132.99
A1084S Colour Monitor £242.99
A1900M Mono Monitor £94.99
A1010 Disk Drive £88.99
A1352 Mouse £32.99

A2000 P.O.A.
A2000 + A1084S P.O.A.
A2024 HiRes Mono Monitor P.O.A.
A2010 Internal Drive P.O.A.
A2090 20Mb Hard Drive P.O.A.
A2093 20Mb A/boot Drive P.O.A.
A2095 40Mb A/boot Drive P.O.A.
A2286 PC-AT Bridgeboard P.O.A.
A2088 PC-XT Bridgeboard P.O.A.
A2620 68020/68881 P.O.A.
A2058 Ram Expansion P.O.A.
A2621 Unix Card P.O.A.
A2300 Genlock P.O.A.
A2350 Prof Video Adaptor P.O.A.
A2032 PAL Comp Vid Card P.O.A.

WORD PROCESSING

Excellence £177.40
Kind Words 2 £36.35
Protext £68.50
Protext Filer £18.40
Protext Office £24.95
Pro Write 2 £70.60
Transcript £32.50
Word Perfect £177.40

DATABASES

Acquisition 1.3 £192.80
K-Data £34.80
Microfiche Filer £63.00
Microfiche Filer Plus £124.00
Superbase Personal £41.35
Superbase Personal 2 £68.50
Superbase Professional £166.95

SPREADSHEETS

K-Spread 2 £41.35
Maxiplan A500 £89.70
Maxiplan Plus £133.55
Superplan £68.50

LANGUAGES/COMPILERS/ETC

APL 68000 £99.95
A-Rexx £36.30
Aztec C Developer £126.00
Aztec C Professional £91.60
Aztec C scd £56.35
Benchmark Modula 2 £132.50
Benchmark C Libraries £70.60
Devpac 2 £41.35
GFA Basic V3 £47.55
Hisoft Basic £55.40
K-Seka Assembler £34.80
Lattice C V5 £178.00

SOFTWARE

UTILITIES

Amikit £28.65
Ashas Caligrafont £47.75
B.A.D. £32.50
B.B.C. Emulator £40.00
Butcher 2 £28.65
CLimate £32.50
Cygnus Ed Professional £70.60
Disk 2 Disk £40.00
Diskmaster £40.00
Enhancer (WB 1.3) £13.85
Facc II £24.85
Fancy 3D Fonts £40.00
Gomf V3.0 £28.65
Grabbit £24.85
Interchange £40.00
Interchange Objects 1 £17.25
I/Change Mod V3D/FinF £17.25
I/Change Mod V3D/Turbo £17.25
JDK Video Fonts £32.50
Kara Fonts £55.35
K-Gadget £21.65
K-Roget £34.80
Lions Fonts £47.75
Mailshot Plus £34.80

Newsletter Fonts £24.85
Power windows V2.5 £55.35
Pro Video Font Set 1 £55.35
Pro Video Font Set 2 £55.35
Project D £32.50
Quarterback £47.75
Studio Fonts £24.85
Text Ed Plus £42.00
The Calligrapher £70.60
X-Form £26.35
X-Copy V2 £16.90

DESK TOP PUBLISHING

City Desk £83.20
Pagesetter £63.00
Professional Page £193.50
Publishers Choice £71.65
Shakespeare £119.70

CAD/GRAPHICS/ANIMATION

Animagic £63.00
Animate 3D £97.35
* Architectural Design £22.30
Animator/Images/Art £55.00
C-Light £40.00
Comic setter £40.00
Comic Strip Clip Art £17.25
Deluxe Paint III £60.50
Deluxe Photolab £53.15
Deluxe Print II £38.55
Deluxe Productions £104.35
Deluxe Video £53.15
Design 3D £63.00
Digi Paint 3 £55.35
Draw 2000 £173.00
Fantavision £31.95
Forms in Flight 2 £93.50
* Future Design £22.30
* Human Design £22.30
Icon Paint £18.20
Impact £55.35
* Interior Design £22.30
IntroCAD £47.75
Light's Camera Action! £51.55
* MicrobotDesign £22.30
Modeler 3D £63.00
Movie Setter £55.35
Page Flipper + FX £93.50
Photon Paint 2 £61.00
PIXmate £40.00

Professional Draw £108.75
Pro Video Plus £193.50
Sculpt 3D £66.80
Sculpt 4D £355.00
Sculpt 4D Junior £103.80
The Director £47.75
The Director's Toolkit £28.65
Turbo Silver £108.75
TV Show £70.60
TV Text £70.60
Video Effects 3D £124.00
Video Generic Master £55.35
Video Titrer £86.20
Video Wipe Master £55.35
Videoscape 3D £124.00
X-CAD Designer £89.75
X-CAD Professional £352.80
Zoetrope £86.85
*state Sculpt or Videoscape!

Music

A Drum £32.50
Audiomaster 2 £63.00
Deluxe Music £53.15
Dr T's KCS £154.50
Dynamic Drums £47.75
Dynamic Studio £116.35
Instant Music £20.25
Music X £184.15
Opus 1 £80.00
Pro Midi Studio £111.35
Sonix £51.55
Sound Oasis £63.00
Studio Magic £69.85
Synthia £74.70
Track 24 £75.00
Ultimate Sound Tracker £29.50

COMMUNICATIONS

A Talk III £70.60
BBS PC £93.50
Ruby Comm £54.65
Ruby Comm Plus £77.50

ACCOUNTS

Arena Accounts £88.25
Home Accounts £21.65
Small Business Accounts £62.35

Please ring for prices/availability on any hardware/software/peripherals not listed. (Full price list on request)

Please make cheques/postal orders payable to SOFTMACHINE. All prices are inclusive of V.A.T.
ALL PRICES CORRECT AT TIME OF GOING TO PRESS All items subject to availability.

SOFTMACHINE

Dept AUI 11, 36 Guernsey Road, Sunderland SR4 9RR. Telephone: 091 385 7928

(051) 236 0480 • 24 Hour Sales
(051) 227 2482 • 24 Hour Fax

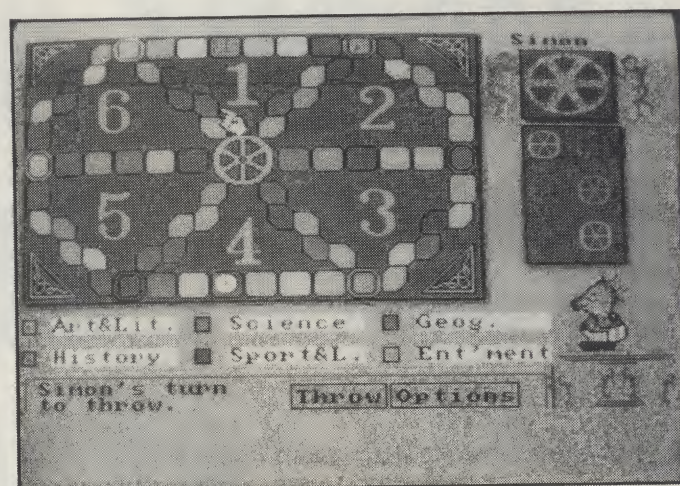
Trivial Pursuit

Domark

The computer version of Trivial Pursuit has been around for some time but, it has only recently been released for the Amiga user.

For those of you unfamiliar with the game its basic principle is that of a quiz. Six categories of questions are available, History, Science, Entertainment, Geography, Art & Literature and Sport. Each question has an assigned colour and the board consists of a wheel made up of these coloured squares. There are six spokes on the wheel and at the end of each of these is a special question square, one for each question group. Each player, or team, uses a token which can hold six triangles. On answering the questions correctly, on the special square, the designated coloured triangle is placed in the token. A dice is used to move around the board with all the tokens starting from the hub of the wheel. Grey squares are situated around the wheel and these signify another throw of the dice. To win the game a player must collect all six triangles and then return to the hub of the wheel and answer a question selected by the other players.

The computer version of the game consists of all these elements plus one or two available by use of a computer. The game includes a cartoon type character known as TP. TP asks the questions and as he does not use a human voice they are also displayed in words on the screen. There is no mechanism by which the answer to the question can be checked and it is therefore up to your opponents to enter whether or not the answer is correct. TP is also used to select the number of squares to be moved by the throwing of a dart at the board, which shows the

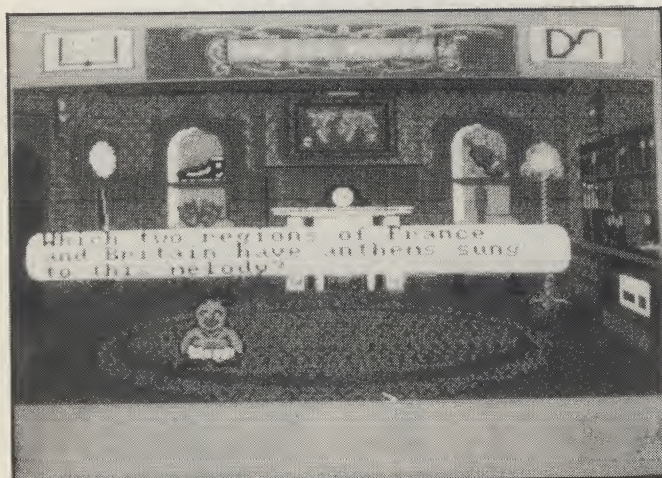


numbers one to six. TP can be switched off, which to my mind is a better way to play the game.

An interesting addition is the analysis which can be displayed on how each player is handling the questions. This can then be used at the end of the game for your opponents to select a question. The questions themselves are displayed in a 'question room' which contains a grandfather clock showing the length of time that the current game has been going on. A timer element to the game can also be selected and the 'question room' has a candle which burns down as the time for the question passes. The main advantage over the board game concerns the questions for the computer version, which makes use of both sound and picture questions. The game can be played alone, but of course it is up to the player to enter whether the answer is correct. On completion of the game a score will be provided based on your performance.

This version is obviously a conversion from the earlier releases and unfortunately, this is its weak point. The program makes no use of the the Amiga's advanced sound features. The music questions are a bit plink-plonk, it is a pity digitised sounds were not utilised. The graphics are improved from the C64 version and this makes for better picture questions. If you are a Trivial Pursuit nut, like me, this game will be for you and will be welcomed in the Amiga format.

L.K.



PRICE: £19.95

3D POOL

Firebird

It is often said that while computer technology advances at speed, the games to run on them are no more than re-workings of their forerunners. Xenon II takes great advantages of the Amiga's hardware with superb results, but the basic dodge and shoot gameplay owes a lot to Space Invaders. 3D Pool on the other hand, uses that technology to create something that would have not been possible just a few years back.

3D Pool is easily the most realistic pool sim yet. For the first time you see everything through your own eyes, rather than an overhead camera. Your opponent and your cue are both invisible. So how do you aim with an invisible cue? That 3D is not just a gimmick. Shots are lined up by rotating the table around the cue-ball. The ball is always hit directly into the screen (although in reality it goes up the screen), so the view you see on-screen is just as you would see in a real game. Without any markers to help line up the shot, accuracy can be a problem, although taking the cursor straight up from the centre of the cue-ball can help.

Of course all the calculations of a standard pool sim, combined with the 3D maths, make the game a touch slower than its 2D counterparts. All the same, the speed is up to the current solid 3D standard, and the frame-refresh rate is no problem. What can string a game out is the time a computer opponent takes to ponder his shots. Things move a little faster if you opt to play against a friend. When you're bored with playing a normal game, you could select the



Take your cue...

Firebird chose UK pool rules for their simulation, but there are many different varieties of the game played worldwide. The US game is all about scoring points, played not with the now-common reds and yellows of UK pool, but numbered spots and stripes. The French allocate three pockets along one side to each player, into which they can pot any ball on the table, bar the black and white. For a really weird game, why not track down a pub with a six-sided rotating table?



"trick play" mode. This presents you with a series of set-ups, demanding you pot all the yellow balls without fouling. You can also set up some of your own trick shots.

I would have liked the option to play with an alternative shot line-up system, but other than that and the slight problem with slow opponents, I can't fault 3D Pool's execution. The idea is excellent, and it works extremely well. With only Steve Davis World Snooker as competition, it's well worth a look.

T.H.

Graphics: 8 Sound: 5 Playability: 8
ABSOLUTE VALUE: 7 Price: £24.95

DATTEL ELECTRONICS

STEREO
SAMPLING



AMIGA PRO SAMPLER STUDIO + DATEL JAMMER

- ▼ A top quality stereo sampling system at a realistic price.
- ▼ 100% machine code software for realtime functions.
- ▼ HiRes sample editing.
- ▼ Realtime frequency display.
- ▼ Realtime level meters.
- ▼ Files saved in IFF format.
- ▼ Adjustable manual/automatic record trig level.
- ▼ Variable sample rate & playback speed.
- ▼ Separate scroll line waveform windows & zoom function with Edit windows for fine accurate editing.
- ▼ 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.
- ▼ Microphone & line input 1/4" Jack & Din connections.
- ▼ Software files can be used within other music utilities.

ONLY £79.99 PLEASE STATE A500/1000/2000

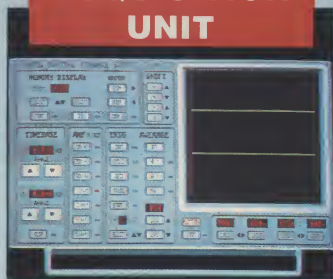
MIDIMASTER



- ▼ Full Midi Interface for A500/1000/2000 (please state model).
- ▼ Compatible with most leading Midi packages (including D/Music).
- ▼ Midi In - Midi Out x3 - Midi Thru.
- ▼ Fully Opto isolated.

ONLY £34.99

DATA ACQUISITION UNIT



ONLY £99.99
PLEASE STATE A500/1000/2000

TO COMPLEMENT THE SAMPLE STUDIO THE DATEL JAMMER GIVES YOU A 5 OCTAVE KEYBOARD TO PLAY & RECORD YOUR SAMPLED SOUNDS

FEATURES:-

- 4 track sequencer up to 9999 events.
- Tempo & Beat controls.
- Mixer Controls on Instruments.
- Load & Save sequence.
- Works on standard IFF file sounds.



VIDEO DIGITISER

- ▼ 256 x 256 display with 16 grey levels.
- ▼ Realtime frame grab 1/50th second.
- ▼ Takes standard composite Video input from camera or Video recorder.
- ▼ Screen update 1 frame per second, single, continuous or buffered display.
- ▼ Load, Save facilities including IFF Save.
- ▼ Edit picture, cut, copy, paste and undo.
- ▼ Special effects, reverse, negative, mirror, compress, etc.
- ▼ Increase the width of the display to 320 x 256 automatically or manually.
- ▼ Plugs into the parallel port of your Amiga 1000/500/2000.
- ▼ Comes complete with its own power pack.

ONLY £89.99

A TOTAL MIDI MUSIC PACKAGE

UNBEATABLE VALUE PACK - THE YAMAHA SHS 10 FM MIDI COMPATIBLE GUITAR-STYLE SYNTHESISER, THE ACTIVISION MUSIC STUDIO SOFTWARE PLUS THE MIDIMASTER INTERFACE TO CONNECT TO YOUR COMPUTER SYSTEM

PRINTER LEADS

- ▼ 25 pin 'D' to 36 way Centronics parallel lead. 1.2m length.
- ▼ A500 or 1000, please state.

ONLY £8.99

SAVE OVER

£75*

YAMAHA SHS 10 FM SYNTHESISER KEYBOARD

- ▼ Superbly styled guitar-type keyboard with shoulder strap.
- ▼ Top quality brandname.
- ▼ 2.5 octave keyboard.
- ▼ 25 built-in instrument and rhythm choices.
- ▼ Uses FM synthesis.
- ▼ Full MIDI standard.

ACTIVISION MUSIC STUDIO

- ▼ A full feature MIDI Recording Studio.
- ▼ A multi channel sequencer with realtime input and full editing facilities.
- ▼ Completely menu driven - full Mouse control.

- ▼ Very simple to use.
- ### MIDIMASTER INTERFACE
- ▼ This unit connects your computer to any MIDI instrument.
 - ▼ Fully Opto isolated - MIDI IN, MIDI OUT, MIDI THRU.
 - ▼ Just plug in and go.

FREE CABLES

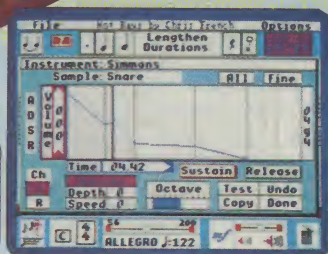
- ▼ 3 metre long MIDI Cables - completely FREE!! (normally £6.99).

FOR ONLY
£99.99
NO MORE TO BUY!!



FREE MIDI CABLES

* R.R.P. over £175



DATTEL ELECTRONICS

EXTERNAL 3.5" DISK DRIVE

▼ Slimline extra low profile unit - only 6" long!

- ▼ Top quality fully compatible drive mechanism.
- ▼ Throughport allows daisy-chaining other drives.
- ▼ A superbly styled case finished in Amiga colours.
- ▼ 1 meg unformatted capacity.

▼ Good length cable for positioning on your desk etc.

ONLY £129.99 TWIN DRIVE

ADD £5 FOR COURIER DELIVERY IF REQUIRED

EXTERNAL DRIVE SWITCH

▼ DF1 & DF2 controlled.

▼ Switch in/out of external drives.

▼ Fits between computer & driver(s).

▼ Save on memory allocated for drives not currently in use.

ONLY £9.99



STEREO BOOSTER SYSTEM

- ▼ Boost the output of your Amiga in glorious stereo.
- ▼ 30W + 30W power amplifier.
- ▼ 5 band graphic equalizer.
- ▼ Complete with cables for A500/A1000/A2000 models.
- ▼ Slimline colour matched metal case with built-in mains power unit.
- ▼ Headphone socket.

ONLY £59.99



MATCHING SPEAKERS

- ▼ High quality miniature 3 way speaker units in die-cast aluminium shelf enclosures.
- ▼ 30 Watts 8 ohm each.

ONLY £39.99 PAIR

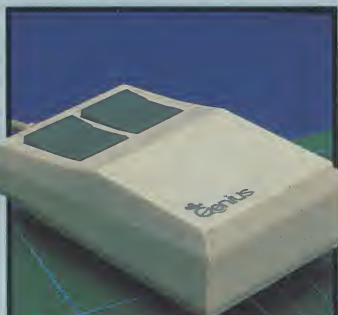


LOW COST BAR CODE READER

- ▼ Model 420, high performance, low cost Bar Code Reader.
- ▼ Works with any Amiga/ST computer system (please state which) via the RS232 interface.
- ▼ Features a built-in self-testing function.
- ▼ Can read codes EAN, UPC, Interleaved 2 of 5, Code 39, CODABAR.
- ▼ Comes complete with wand, ready to go.
- ▼ Features a diagnostic indicator.

ONLY £189.99

**NEW LOW
PRICE ONLY
£69.99
SINGLE DRIVE**



REPLACEMENT MOUSE

- ▼ High quality direct replacement for mouse on the Amiga.
- ▼ Teflon glides for smoother movement.
- ▼ Rubber coated ball for minimum slip.
- ▼ Optical system counting - 500/mm.

**Special offer - free mouse
mat + mouse house
(worth £7.99).**

**ONLY £29.99
COMPLETE**

512K RAM EXTENSION CARD



- ▼ Available with/without calendar/clock option.
- ▼ Simply plugs internally into A500 slot.
- ▼ Switch in/out with switch supplied.
- ▼ Fitted in minutes - no soldering etc.
- ▼ Accepts 41256 DRams (zero K fitted).
- ▼ With calendar/clock onboard time/date automatically booted.
- ▼ Battery backed to retain time/date.

**ONLY £19.99
FOR STANDARD CARD TO
ACCEPT 512K**

**ONLY £34.99
FOR VERSION WITH CLOCK/
CALENDAR**

NB THESE PRICES ARE FOR BOARDS WITHOUT RAM CHIPS. PHONE 0782 744707 FOR RAM PRICES. PHONE FOR LATEST FULLY POPULATED BOARD/RAM PRICES.



GENISCAN GS4500 AMIGA



- ▼ An easy to handle Handy Scanner featuring 105 mm scanning width & 400 dpi resolution enables you to reproduce graphics & text on your computer screen.
- ▼ Adjustable switches for brightness & contrast.
- ▼ A powerful partner for Desk Top Publishing.
- ▼ With Geniscan you have the ability to easily scan images, text & graphics into the AMIGA.
- ▼ Printout for Epson compatibles.

- ▼ Powerful software allows for cut & paste editing of images etc.
- ▼ Save images in suitable format for most leading packages including DELUXE PAINT etc.
- ▼ Package includes GS4500 scanner, Interface & Scan Edit software.
- ▼ Unmatched range of edit/capture facilities simply not offered by other scanners at this unbeatable price.

**SPECIAL OFFER
COMPLETE WITH DELUXE PAINT II &
DELUXE PRINT FOR ONLY £189.99
INCLUDING HARDWARE/SOFTWARE**



ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER ...

BY PHONE

0782 744707
24hr Credit
Card Line

BY POST

Send cheques/POs made
payable to
"Datel Electronics"

FAX

0782 744292

UK ORDERS POST FREE
EUROPE ADD £1
OVERSEAS ADD £3

PRICES AND SPECIFICATIONS CORRECT AT TIME OF PRESS
AND SUBJECT TO CHANGE WITHOUT NOTICE

CALLERS WELCOME - Please reserve goods by telephone prior to visit.

DATTEL ELECTRONICS

DATTEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE
GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

**SALES ONLY
0782 744707**

**TECHNICAL ONLY
0782 744324**

FIRST micro

**HARDWARE & SOFTWARE
SPECIALISTS**
NEW! SHOWROOM
13 LANSDOWNE RD
BOURNEMOUTH
DORSET BH1 1R2



EXC. VAT

(0202) 24927



£5 DELIVERY

AMIGA A500

+ FREE £220 SOFTWARE

INCLUDING: ● PURPLE SATURN ● HOSTAGES
● INTERNATIONAL SOCCER ● WINTER OLYMPIAD
● SPITTING IMAGE ● STARGOOSE ● BACKLASH
● QUADRALIEN ● ELIMINATOR ● 20 P/D GAMES
● FANTASTICK F3 JOYSTICK
● TV MODULATOR

£315

AMIGA A500/

1084(S) MONITOR £476

**AMIGA B2000/
1084(S) MONITOR**
INC ACCESSORIES

£1049

AMIGA A500

INCLUDING:
● MOUSE ● WORKBENCH
● UTILITIES ● MANUALS
● BASIC ● TUTORIAL
● TV MODULATOR

£289

AMIGA B2000/ PHILIPS 8833

INCLUDING:
● MOUSE ● WORKBENCH
● BASIC ● UTILITIES ● MANUALS
● XT BRIDGE BOARD
● 20Mb HARD DISK

£1299

AMIGA B2000

INCLUDING:
● MOUSE ● WORKBENCH
● BASIC ● UTILITIES ● MANUALS

£799

**THE
star**
COMPUTER PRINTERS

**LC24-10
£249**

**LC10
COLOUR
£169**

AMIGA EXTERNAL DRIVES

Cumana Cax 354E £79
AF880 £78
RF302C £74
Supra 20Mb H/disk £499
★ All drives 1Mb + on/off switch ★

AMIGA ACCESSORIES

A501-512k RAM £109
TV Modulator £22
Mouse Mat £4.39
Amiga dust-cover £6.89
3 1/2 135TPI DS/DD £9.99

SPECIAL OFFER!

**COMMODORE 1084(S)
NEW PRICE £199**

A2000 HARDWARE

A2000 + 1mb RAM £869
A2000 + 1084(s) monitor
+ bridge BD + 20Mb H/disk £1369
A2000 + 1084(s) £1049
20Mb hard disk £299
XT bridge BD £299

A500/A2000 MONITORS

1084(s) High res monitor £209
Philips CM8833 Highres £199
1901 C64 - colour Call
1900 C64 - mono £119

PRINTERS

Star LC10 (P) 130CDS £139
Star LC10 Colour £189
Star LC24-10 (24 pin) £269
Citizen 120D £105
Commodore MPS 1230 £119
Panasonic KXP1124 (24 pin) £279
Panasonic KXP1081 £149
Epson LX800 £158
Epson LQ500 £250
Epson FX850 £409
Epson FX1050 £382
Epson EX800 £369
Epson EX1000 £419

COLOUR PRINTERS

Citizen HQ40 £352
Epson EX1000 £543
Hewlett Packard Paint Jet £719
NEC P6+ £469
NEC P7+ £589
Star LC10 £194
Xerox 4020 £949

LASERS

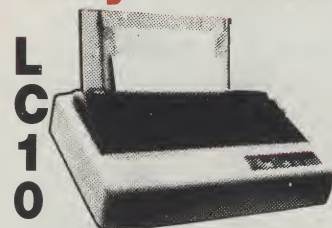
Citizen Overture £1299
HP Laserjet II £1825

BUSINESS S'WARE

Sale £
AEGISonix £39
Animated Images 3D £99
City Desk £69
Deluxe Video £49
Deluxe Music £49
Deluxe Paint £49
Digiview Gold £109
Home Accounts £19
Mailshot Plus £39
Maxiplan A500 £69
Music Studio £23
Organiser II £49
Page Setter £89
Page Flipper Plus £24
Photon Paint £49
Photon Video Ring

Professional Page £175
Pro Writer 2 Ring
Publisher Plus £69
Sculpt3-D Animate £102
Sculpt3-D £63
Superbase II £59
Superbase Personal £44
Superbase Professional £169
TV Show/Text £79
Word Perfect 42 £169
'Works' £69
Zumafonts £25

Only £137.00



Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (with 96 print combinations) at 36cps and 144cps draft. Has a large 4K buffer and IBM/parallel interface built in. Includes a comprehensive front panel operation and features paper parking, allowing single sheets to be used without removing tractor paper.

ALL PRICES EXCLUDE VAT

**CREDIT CARD MAIL ORDER
AND EXPORT HOTLINE**

(0202) 24927

OPEN MON-SAT 9am-5.30pm

All prices and manufacturers specifications subject to change without notice, please call before ordering.

To: First Micro, 13 Lansdowne Rd, Bournemouth, Dorset BH1 1R2

I wish to order

My computer is

I enclose cheque/P.O. for £ Inc VAT.

Or charge my Access/Visa No. Exp. date

.....

Name Signature

Address

.....

Postcode Tel No:

Amiga Answers

**Yuri Large tracks down the tips
that keep you on top!**

Dear AUI,

I purchased an A500 machine just over a year ago, with the intention of expansion over a period of time.

I would be grateful for any comments or views on the following.

The first stage, about now, is to purchase the Datel external twin drive, which I understand is a pretty good buy.

However, within the next 12 months or so I hope to get a hard disk drive.

The A590 20Mb drive has been released and retails at around £399, which is just about in my price range. It has received rave reviews from many sources and seems a strong competitor for my final choice. However, AUI recently reviewed the Spirit HDA506 Sub System + Hard Drive and most impressions seemed favourable. I feel much of the favour was due though to the expected retail price of about £600 for the A590. Opinions? I am also considering the purchase of a Star LC-10 colour printer, again due to being well received by those "in the know". I would be interested to know of the relevant merits and demerits of others in the same price range.

Looking further ahead, I wish to take up music as a serious hobby on the Amiga. I understand a good overall package is Music X, AMAS, the Cheetah MK5II and the Casio CSMI MIDI sound expander. Opinions (and warnings!) again please.

Also, I have a Casiotone 1000P electronic keyboard which I bought in 1984. It has four "jack" sockets at the back, one labelled "LINE OUT". Is it possible to modify this for use as a MIDI keyboard? Two final problems.

I am concerned, as a relative newcomer to computers, about the introduction of Workbench 1.3. Will 1.3 software work on my 1.2 machine, or will I be forced to upgrade? Finally, and probably most basic of all, what exactly is IFF? I've never come across an understandable explanation. As a suggestion, perhaps a page of the most common examples of "computerese" printed, say, every six months would be very helpful to new Amiga own-

ers like myself who have had little previous computer experience.

As previously mentioned, I would be grateful for any comments or views from yourselves and other AUI readers who can point me in the right direction, and would hope to be in a position to return the favour in the future.

Many thanks.

David C Wright, Tyne & Wear

Dear David,

The Datel dual floppy drive system is indeed a very good buy. If you are looking for a hard drive anyway, it may be as well to consider if you really need three floppy drives on your system. Don't forget that each drive present takes up valuable memory. In this case it may be a better idea to go for just a single floppy drive instead.

With regard to the two hard drives you have mentioned, I think your comment is probably right. A lot of people were rather shocked by the bargain price of the A590. To compare the two, I would say that for the ambitious Amiga user the ability to easily add more RAM to the A590 is a great boon. On the other hand the Spirit system does allow you to attach a very large hard drive directly to your system without much fuss. Don't forget that the A590 only comes with an 80 millisecond access time, 20 Mb hard drive. This drive is quite slow and small in hard drive terms, so it's worth considering your speed and size requirements before making a final decision. So, there are the usual pro's and con's for each system.

My overall opinion would be that at the present time the A590 is probably the better option. Recently I have heard that ASAP are to bring out a new version of their AmDrive, which will have exactly the same specification as the A590, but with either a 30 Mb or 50 Mb hard drive. It should be worth looking out for, as apparently the 30Mb version will retail for the same price as the A590.

The Star LC10 Colour printer is an excellent buy for the home Amiga user

that not only wants to print the odd letter or two, but also wants to output some of the brilliant colour graphics that the Amiga is capable of. Competition for the Star is all but non-existent, especially at its price of roughly £250. The only other printer worth a mention is the OkiMate 20, which outputs almost magazine quality colour copy. However, the Oki is very, very slow and cannot really be used to print letters as its text output is very poor. Also, the Oki is very expensive to run as it requires special paper and ribbons. Therefore, I would have no hesitation in recommending the Star.

Music-X has caused a near revolution in the music world - so any MIDI system built around it should be excellent anyway. Your choice of keyboard, synth unit and sampler are sound (excuse the pun) as well. However, your Casiotone 1000P keyboard will probably not be modifiable to use with this system, unless you are an electronics genius. You will probably save time and money by selling it to finance the other equipment.

All properly written software for the Amiga should run under both 1.2 and 1.3. Of course there are exceptions to the rule, but these are in most cases of the games persuasion. In fact, I cannot think of a single piece of applications software that will not run under both! At this point, it is worth pointing out that the differences between 1.2 and 1.3 are fairly superficial, and I suspect that there will be much greater problems once 1.4 arrives...

IFF stands for the Interchangeable File Format. At the time when the Amiga was first being developed, a software house called Electronic Arts, who were of course responsible for Deluxe Paint, were asked to work on standard file formats for storing graphics, sounds, scores, documents and various other types of data.

A file format is used by programmers so that they can access information about the data in a file in order to use it properly. For example, with an Amiga graphics file you need to know the palette used to create it before loading it, as otherwise all the colours will be wrong spoiling the effect its creator would have wanted. By using a standard file format that includes data about things such as the palette this type of problem can be avoided. So, IFF just refers to the set of file formats used for different types of data on the Amiga. The main advantages of IFF are that data can be taken from one program to another without any need for a file conversion process.

Dear AUI,

I have an Amiga 500 computer, with which I am very happy! However, I have a query for you. I have recently purchased a new program - DigiView Gold, and I am having problems with it.

My monitor is a Commodore 1084 and I have a black and white Sony security video camera.

continued on page 46

continued from page 45

When I operate the camera with the monitor on CVBS - but without the computer - I receive a perfectly stable, clear picture.

However, as soon as I turn on my computer, the picture becomes out of sync. Hence I cannot simultaneously operate the computer and focus my camera to digitize on a new picture.

Several friends of mine (all with the same computers and monitors as mine), have reported the same problem; the procedure we have to use in order to digitize any new picture is as follows: disconnect the computer output to the monitor cable and switch the monitor to CVBS, adjust and focus the camera, disconnect the camera cable from the monitor and hook it up to the DigiView hardware, switch back to RGB and connect the computer cable to the monitor.

Hence we have to digitize "blindly", relying on our previous set-up with the camera.

However, another friend of mine has an older model of the Commodore monitor - I believe it is a "1702" - and this operates normally, i.e. as the DigiView manual states that it should! I wonder if there is any modification that should be done to our 1084 monitors? I would be very grateful if you could offer some advice. Thank you.

I receive a monthly copy of your magazine and I find it most enjoyable reading and extremely helpful. Keep up the good work!

Yours sincerely,
Yousef Suliman, Kuwait

Dear Yousef,

After quite a bout of research, I have been unable to uncover a hardware modification that will sort out your problem. However, if anyone out there does have a solution let me know, and I will pass it on.

In the mean time, one solution would be to buy a cheap, composite video monitor for use when focusing your camera. And, as this would be a totally separate monitor all together, it would not interfere with the output on your 1084. Phillips make such a monitor, and it retails for about 100 pounds when brand new. I would advise that you visit a computer auction before buying new if possible, as these items are usually in abundance at such events.

Dear AUI,

I own an Amiga A500 and have had it now for about half a year. I have a number of questions that I would very much like to have answered.

Firstly, I have recently started to learn C, but have not yet purchased a compiler and would like your advice. I have a budget limit of about £80, but would very much like one cheaper. Do you know of one and where might I be able to purchase it? I am also thinking of expanding the

peripherals of my Amiga and am not sure what to purchase first. Have you any advice on what might be best? Thinking into my future now, I hope to continue in computers. First, what "A" levels would you advise on and secondly, would you say there are more computer job opportunities in places like the USA or Australia? Thank you for your attention.

Yours sincerely,
J Douse, Wiltshire

Dear Mr Douse,

The Amiga C market is dominated by two major players, namely Manx and Lat-tice. Both produce excellent C compilers, which include all sorts of bells and whistles, however they both retail for over 150 pounds. This puts them well outside most peoples' budget! As you can imagine there is a huge gap in the market.

Your best bet at present bearing your budget in mind, will probably be the public domain. Try...

I personally have no formal computer qualifications, apart from "O" level wood-work that is, so I'm not really qualified to comment! In my opinion though Computer Science, Mathematics and Physics are probably the most useful subjects to study at "A" level.

There may well be more job opportunities in other countries, but the job market in the UK is crying out for computer personnel so why bother?

Dear AUI,

I have recently purchased an Amiga 500, monitor and Star LC-10 colour printer. I keep being asked to design letter-heads, but am having problems finding a program which will cope with long letter-heads. My program Deluxe Print hasn't the room, and Kindwords v2.0 has problems aligning different fonts on the right hand side of the page. Do I need a page-setting program, and if so, which one? I bought my copy of Superbase Personal one day before I read your review. I agree it is an excellent program, but I am having problems printing records. If I use the set printer option, it prints the fields first and then the record, but splits words between lines making it look nonsense. If I use screen dump, it prints the screen in a readable format, but if I scroll it prints the last part of the first page again. The only way I can stop the printer when scanning through records is to close the file.

Your comments (in plain English please!) would be appreciated.

Yours sincerely,
Miranda Lovell, Lincolnshire

Dear Miranda,

If you wanted to design a long letter-head using Deluxe Print, you could use the poster option rather than the letterhead option. This would then allow you to use the whole page if you wanted! However, I will admit that Deluxe Print is not the

world's most flexible program. A DTP program may well be worth considering, although in my opinion you will probably have to spend in the region of 150 pounds before you get better results than you can already achieve with Deluxe Print. My recommendation would be Pagestream, which despite all its warts is still a very powerful program.

In order to produce customised output from Superbase Personal you will need to use the Query process. This allows full manipulation of your data, from selecting the particular fields to be printed, to asking for a count of the items printed. This is covered in some detail in the manual, I hope this pointer gets you on the right road.

Dear AUI,

I am a programmer currently doing a computer course at Tech and have started to learn Assembly and C. However, learning these on one's own does take up time.

I would also like to express my views on piracy. Firstly, prices of software, and games in particular, are over expensive and this is why there is so much piracy. However, it's not so much the software houses' fault, but more that of the high street shops and mail order businesses that sell them. A possible solution for games would be when a game has been out for a couple of months to put the price down. I know that this works because I know a shop that does it, but for non-games software. What about an English-based shareware group? While I can see that it is necessary for people to write about their problems, I would also like to see more people write in with their views, as I am sure more Amigans would enjoy reading and answering them.

I would also like to comment on your magazine. It has a very good and varied content, so keep up the good work.

Anonymous, Surrey

Dear Anonymous,

Firstly could I just say that we do prefer people to own up to their letters! With regard to your ideas on piracy, I am sure that you are right about reducing the prices to reduce the copying. A few of the software houses are taking up this idea already, for example Klassix who have just released a few old games at less than half price. However, I must lay the blame for the prices in the right place - all the prices of software are dictated by the software houses that release them and not the shop that sells them.

The UK Amiga User Group and ICPUG already run PD/Shareware libraries for the Amiga, however an increased awareness of these would be needed for them to become useful.

Finally, I could not agree with you more, we would love to see more comments and views from all you readers out there.

Evesham Micros

All prices include VAT/delivery

AMIGA ACCESSORIES

MiniGEN Genlock adapter	£95.00
Omega Projects MIDI Interface, including 30" serial cable	£29.95
Contriver Hi-Res Mouse, includes Mouse Mat & Pocket	£22.95
A500 Dust Cover	£4.95
ITT CP3228 16.5" FST TV/Monitor inc. rem/control & cable	£229.00
Philips CM8833 14" colour monitor, suits for Amiga 500	£229.00
GFA BASIC Version 3	£49.00
Home Accounts	£18.95
Kind Words Version 2	£37.95
Superbase Personal	£69.00
Superbase Professional	£179.00
Super-Plan	£74.95
Track 24 (MIDI sequencer package)	£60.00
Word Perfect	£183.00

A-MAX MACINTOSH EMULATOR

An AMIGA COMPUTING Gold Medal winner - allows Amiga users to emulate a Mac Plus in order to run Apple Mac and Mac Plus software. Mac disks can be read directly in when an external Mac Drive is connected to the cartridge hardware. Runs at least as fast as a Mac Plus! Software compatible with the A-Max includes MacPaint, MacDraw (V1&2), MacWrite, Pagemaker (V1&2) plus all versions of System. A-Max without 2 x Mac 128K ROMs ... £129.00 A-Max WITH 2 x Mac 128K ROMs £249.00

PRINTERS

All prices include VAT delivery & cable



star

We use and recommend Star printers because they offer an unbeatable combination of features, print quality, reliability and value. When buying, please note we are now offering 12-month on-site maintenance contracts for £5.75 extra.

Hugely successful 9 pin printer, the Star LC10 provides 4 NLQ fonts (96 print combinations) at 36cps and 144cps draft. Includes 4K buffer and IBM/parallel interface, front panel operation, plus paper parking, allowing single sheets to be used without removing tractor paper.

Only £169.00
Colour version also available,
Only £215.00
Prices include 2 extra
black ribbons free of charge.

Star LC24-10 multifont 24pin printer, new low price	£239.00
Star LC24-15 wide carriage version of LC24-10, 200/67 cps	£409.00
Star LC15 wide carriage version of LC10, 180/45 cps	£329.00
Star LC-10 Mk.II faster version of LC10, 180/45 cps	£199.00
Panasonic KXP1081 reliable + sturdy 9pin 10" printer 120/24 cps	£169.00
Panasonic KXP1180 super new feature-packed multifont 9pin 11"	£199.00
Panasonic KXP1124 new good specification multifont 24pin 11"	£299.00
NEC P2200 budget 24 pin 168/56cps	£319.00
Epson LX400 (was LX800) 10" 180/25 cps	£179.00
Epson LQ550 good 24pin 150/50 cps	£319.00
Citizen 120D budget 9pin printer 120 cps	£139.00
Mannesmann Tally MT-81 130/24 cps	£149.00

DOUBLE TAKE!
PYE 15"
TV/MONITOR
(MODEL 2325)

High quality medium resolution colour TV monitor now available to suit the Amiga. Features teletext, full infra-red remote control, SCART connector, Video/Audio input and head-phone output connectors, 39 tuner presets, external aerial connector and a loop aerial. Supplied with connection cable.

ONLY
£269.00
price includes
VAT, delivery
and cable

3.5" Disks

10 Bulk packed DS/DD 3.5" disks with labels, fully guaranteed	£ 9.95
25 bulk disks as above	£22.95
10 disks as above with plastic case	£11.95
25 disks as above, with 40 capacity lockable storage unit	£29.95
Kodak DS/DD 3.5" disks, top quality storage media. Box of 10	£17.95

How to order from
Evesham Micros



Phone us with your
ACCESS or VISA
card details on :
0386-765500



All prices include VAT and delivery. Express Courier delivery £5.00 extra.

Send cheque, Postal Order
or ACCESS/VISA card details

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Retail outlets also at :
1762 Pershore Road, Cotteridge, Birmingham B30 3BH Tel: 021 458 4564
5 Glisson Road, Cambridge CB1 2HA Tel: 0223 323898

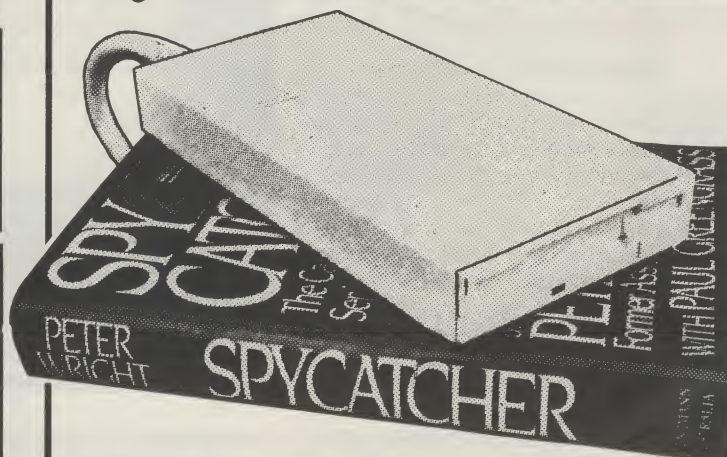
AMIGA 500 LOW COST RAM UPGRADE

ONLY £79.00 inc.VAT & delivery

512K RAM/CLOCK EXPANSION FEATURES :

- ☆ Direct replacement for the A501 expansion
- ☆ Auto-recharging battery backed Real-time Clock
- ☆ Compact unit size : Ultra-neat design
- ☆ Uses only 4 D-RAMs for High Reliability
- ☆ Low power consumption

3.5" EXTERNAL DRIVES using Teac / Citizen drive mechanisms



- Suits Amiga 500 or Amiga 1000
- Teac / Citizen drive mechanism
- On / Off switch on rear of drive
- Throughport connector
- One megabyte unformatted capacity
- Slimline design
- Very quiet
- Long cable for location either side of computer
- Full 12 months guarantee

Ultra low price!

£74.95
inc.VAT and delivery

vortex system 2000 40 Mb hard disks

These high specification units offer versatile high capacity storage suitable for use with the Amiga 500 or 1000. Autobooting capability, a formatted capacity of over 42Mb, with an average access time of 45ms. Includes cables, Amiga interface module, plus utilities software including hard disk backup.

System 2000 40Mb
Hard Disk Package £529.00

Low Cost 5.25" External Drive

The RF542C is a high quality 5.25" drive compatible to the Amiga. Capable of a number of configurations including 40/80 track switching, 360/720K format, giving full 'Transformer' compatibility. Colour matched to the Amiga, quiet in operation, and includes a throughport connector.

£114.95 including VAT & delivery

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
0386-765500
fax 0386-765354

K-Roget Thesaurus

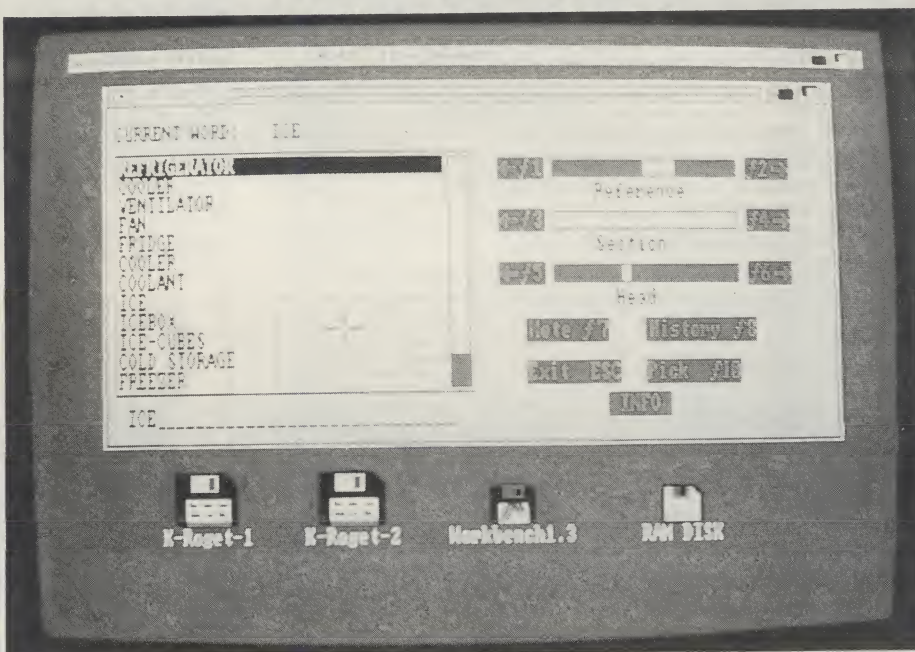
K-Roget is a computerised version of Longmans Pocket Roget Thesaurus. It has been released by Kuma Computers Ltd., and the Amiga implementation is by Phil Reynolds who also did Kuma's K-Gadget. K-Roget is available for PC compatibles (PC DOS and GEM forms), and now the Amiga version has arrived. It is supplied on two disks and needs either a twin-drive or a machine fitted with a hard disk.

A thesaurus is a dictionary of synonyms in the form of words, phrases and expressions which are used by writers, secretaries and perhaps even diligent youngsters for their homework. We use them at **AUI** (believe it or not) so that we can avoid repeating the same words over and over again..... we 'try', 'attempt', 'make an effort', 'do our best', 'endeavour', 'aim' etc., to make the magazine readable as well as technically interesting!

There are two parts to a thesaurus: First of all there is a 'word-finder', which is essentially a list of all the words in the thesaurus together with references to the headings (heads) where related words and phrases can be found. Secondly there are the 'heads' themselves. A 'head' is a group of words, phrases and expressions which are tied together by some general idea..... under one of the heads which contain the word 'ice' we find words like refrigerator, cooler, fridge, icebox, cold-storage, freezer etc. Under another 'ice' heading words like hailstone, ice cap, iceberg and glacier are found.

The Pocket Longman Thesaurus used by K-Roget is up-to-date, slang is kept to a minimum, and obsolete, rare, over-specialized and narrowly technical words have been avoided. The result is that K-Roget is able to provide a broad, general, vocabulary of modern English. Even with the above restrictions there are still over 150,000 words and phrases available!

K-Roget presents the user with a single fixed size window occupying just over half of the WorkBench display. In the bottom left is the string gadget used to identify the current word and above that is a selector box which provides the



word lists.

The program is easy to use... you type a word, hit return and the selector box (providing K-Roget can find the word) displays a header containing the word. Usually words have more than one head reference and the purpose of the 'reference' scroll bar (top right hand of the display) is to let you switch between any of the number of head references which K-Roget might find. Each head reference will have one or more sections and you move between these using another scroll bar. As you type words, pick new selections via a 'Pick' gadget, or mark particular items using the 'Note' facility K-Roget keeps a 'history' record. By clicking on the appropriate gadget you can get a display of the paths you've been following, so it is quite easy to back-track. A head scroll bar is also provided to allow you to look at head entries directly although most of the time it is doubtful whether this random examination of head entries would be of any real interest!

K-Roget can move rapidly between both header references and the section references, so this is the area where the program would score over a book ver-

sion. The K-Roget display itself is quite plain but it is functional and does its job adequately.

K-Roget also includes a phonetic spelling checker which checks words typed in as they sound rather than as they should be spelt and offers likely correct alternatives. Usually the results are O.K., but obviously it isn't fool-proof... typing THRU did not offer the word THROUGH as an alternative, but typing FOTOGRAF did produce PHOTOGRAPH. Neither the spelling check facilities nor the thesaurus itself have links with the outside world so it is purely a reference program and you cannot for instance export psedonyms or spell-check text files.

K-Roget costs £49.95 but at the moment there is a special promotion price of just £29.95. It is a useful program but I rather wonder whether it will sell at fifty pounds when you can buy a good paper-printed thesaurus for £10-£15. At the moment though that question's academic.... and it will remain so until Christmas time when the low price promotional offer, which makes the program reasonably well priced, expires!

P.A.O.



TREBLE



COMPUTING



AMIGA SOFTWARE

African Raiders	£13.50
Balance of Power 1990	£16.50
Battlechess	£16.50
Bio Challenge	£16.50
Circus Attractions	£13.50
Falcon F16	£19.50
Falcon Mission Disk	£13.50
Fed. of Free Traders	£20.99
Forgotten Worlds	£13.50
Grand Monster Slam	£16.50
Gretzky Hockey	£16.50
Hawkeye	£13.50
Kick Off	£13.50
Kult	£16.50
Lords of the Rising Sun	£19.50
Mayday Squad	£13.50
Millenium 2.2	£16.50
Microprose Soccer	£16.50
Personal Nightmare	£20.99
Populous	£17.50
Powerdrome	£17.50
Robocop	£16.50
RVF Honda	£17.50
Skweek	£13.50
Sorcerer Lord	£16.50
Spherical	£16.50
Targhan	£16.50
Tech	£16.50
T.V. Sports Football	£19.50
Weird Dreams	£16.50
3D Pool	£16.50

PRINTERS

STAR LC10 mono inc. Cable	£189.99
STAR LC10 colour inc. Cable	£229.99
CITIZEN 120/D inc. Cable	£139.99
EPSON LX800	£189.99
STAR LC24/10 inc. Cable	£324.99

MONITORS

Commodore 1084S	£259.99
Philips 8833	£229.99

DRIVES

Cumana 1 Meg 3.5" with on/off	£94.99
NEC 1 Meg 3.5"	£89.99
Vortex 40 Mb	£499.99
Amdrive 30 Mb	£389.99
A590 20 Mb (with optional RAM Upgrade)	£389.99
Amdrive 50 Mb	£489.99

AMIGA

AMIGA 500 + DELUXE PAINT 2 + DELUXE PRINT £399.99

AMIGA 500

Inc. Modulator, Workbench 1.3, Mouse, Manuals + Leads
£359.99

AMIGA SPECIAL GIFT PACK

Amiga 500 inc. Modulator, Workbench 1.3 and Manuals. 10 Games and Photon Paint or 8 Games, 24 PD Titles & Joystick. Either of above Plus 80 Capacity Disk Box, 10 x 3.5" Disks, Mouse Mat, Dust Cover. All for only:
£399.99

AMIGA 1 MEG

Amiga 500 + 1/2 RAM Expansion
£489.99

AMIGA 500 + 1084S Med Res Colour Monitor £589.99

AMIGA B2000

Inc. B2000, XT Bridgeboard, A2090 20 mb Hard Drive, + 1084S Monitor
£1499.00

A501 1/2 MEG RAM EXPANSION £129.99

AMIGA 500 + MUSIC X £548.99

MUSIC & SOUND

Aegis Sonix V.2	£44.95
Aegis Audiomaster II	£59.95
AMAS	£77.95
Future Sound	£74.95
Perfect Sound	£74.95
Pro Sound Designer Gold	£74.99
DR T's KCS	£159.95
Eidersoft Midi Interface	£24.95
Datel Midi Interface	£34.95
Dynamic Drums	£46.99
Dynamic Studio	£59.99
Studio Magic	£59.99
Adrum	£36.95
Deluxemusic	£59.95
Music X (Out Now!)	£199.99
Dr T's Midi Recording Studio	£52.95

ART & ANIMATION

Lights, Camera, Action	£47.95
Zoetrope	£79.95
Digiview Gold	£129.99
Deluxe Paint II/Deluxe Paint Combo	£59.99
Deluxe Paint III	£67.99
Aegis Videoscape 3D	£109.99
Comic Setter	£44.99
Movie Setter	£59.99
Minigen (Genlock)	£104.99
Deluxe Photo Lab	£59.99
Deluxe Video	£59.99
Photon Paint II	£79.99
Video Effects 3D	£109.99
Video Wipe Master	£59.99
Aegis Animator	£79.99
Aegis Animagic	£62.99
Aegis Video Titler	£84.99
Comic Setter Clip Art Disks	£19.95
Fantavision	£36.99
Icon Paint	£13.95

A501 RAM Upgrade	£129.99
Workbench 1.3 Enhancer	£13.50
Disk Drive Cleaner	£4.95
Mouse Mat (Soft)	£4.50
A500 Dust Cover	£6.50
Amiga to Scart Lead (Not Sony)	£9.95
Quickshot II Joystick	£8.50
50 x 3 1/2" Disk Labels	£1.50

80 Capacity Disk Box	£6.50
Monitor Covers From	£6.95
A500 Power Supply	£62.50
Modulator	£24.99
B/W Handy Scanner	£209.99
Philips AV7300 Tuner for monitors	£69.99
Modems from	£89.99

All prices include VAT. Please send Cheques/P.O. Made payable to:

TREBLE H COMPUTING

DEPT AU, CROMER HOUSE,
CAXTON WAY, STEVENAGE,
HERTS. SG1 2DF

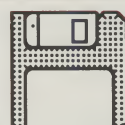
★ CREDIT CARD HOTLINE: 0438 361738 ★

FAX: 0438 740 794

If you do send cash please send it Registered
All Goods are sent First Class/Registered.
Please add £3.00 for outside U.K.

Large orders ie. Amigas, ST, Monitors etc. are always sent by courier.
Please add £6.00 if you require next day courier delivery on other items.

All prices are correct at time of going to Press and are subject to change without prior notice.



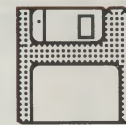
TOP QUALITY 3 1/2" DS/DD GUARANTEED BULK DISKS

NEW PRICES

10	£7.95
25	£17.50
50	£33.50
100	£65.00
200	£128.00

PRICES INCLUDE LABELS

Add £5.50 for 80 Cap. Disk Box when ordering Disks
or £4.50 when ordering 50 or more Disks



The Games: Summer Edition *Epyx*

There was a time when Epyx were widely regarded as the best games software house in the world. Impossible Mission, Pitstop II, Summer Games II, Winter Games and California Games were all superb, and are still just as good today. Since then, a few mediocre releases have tarnished their reputation, but The Games: Summer Edition marks what could be their return to the top.

"The multi-player format has been retained, together with all the usual options for practicing and competing in all or some of the events."

The title has had a reshuffle, but in effect what we have here is Summer Games III. The multi-player format has been retained, together with all the usual options for practicing and competing in all or some of the events. There are eight in all: cycling, diving, hammer throw, hurdles, pole vault, rings, uneven parallel bars and archery.

Typical of the whole game, the cycling uses a completely new presentation and control system to



that of Summer Games II. Rather than a simple scrolling track, it is set in a velodrome. The race is over three laps, but only the times of the final lap count. To conserve energy, both bikes weave around the track for the first couple of laps, slipstreaming at low speeds. Come the final lap, the clock starts and the sprint is on for the line. The solid 3D is a nice idea which works well, and although





neither player quite understands what they are doing, it is a good laugh all the same.

Springboard diving gets back to a more conven-

"You get a wide selection of dive variations, all accessed with combinations of the joystick and fire button."

tional format. You get a wide selection of dive variations, all accessed with combinations of the joystick and fire button. The animation is not nearly as smooth as the similar event in the original Summer Games, but then the central character is a good



deal larger.

The hammer throw is where you will find some of the game's best graphics. Using a rotational waggle technique, you build up speed as the athlete puts his back into it. Press fire to move into the second stage of the throw, and again to launch the hammer out

"As well as the large, realistic graphics, there are plenty of Epyx' favoured visual gags for unsuccessful attempts."

across the field. As well as the large, realistic graphics, there are plenty of Epyx' favoured visual gags for unsuccessful attempts.



A further helping of smooth 3D graphics is dished out during the 400 metre hurdles intro. The camera speeds around the stadium, coming to rest on the start line. One lap of wagging is punctuated by the hurdles, cleared with a press of the fire button. By holding the button down longer, you can increase the length of your leap, giving a greater chance of clearing the hurdle. A brush against a barrier may slow you down, but graze your knee too badly and you'll drop out of the race. The solid 3D stadium adds a touch of realism which helps gloss over the ageing stick-wagging control method.

The rings is a strange event. By switching from up and down to left and right wagging, you guide your gymnast through a variable sequence of holds and moves. The uneven parallel bars use a similar system. Graphics in both, although small, are surprisingly realistic, and the adventurous control methods are not the most user-friendly I've come across.

Again it is the view-points that give the next event, the pole vault, that something special. The run-up is seen from a wierd vantage point, above, in front and slightly to one side of the athlete. For the vault, the display switches to the usual side-on view with a clever close-up replay screen.

Finally there's the archery. While you line up your shots, the blustry breeze is monitored by a windsock. That combined with the simulated wobble of the bow makes for a fairly realistic game. Consistently scoring eights, nines and the odd ten is not too difficult, so the competition is always close.

The Games: Summer Edition is a great improvement over Winter Edition. All those humorous details from the earlier games are back, and on the whole the graphics are very neat. The music irritates from the start, but it can be turned off to be replaced by adequate sound effects. Although the gym events can be fiddly, all eight are very playable, even more so with a bunch of mates. Let us hope Epyx can keep this up for California Games II. Highly recommended.

T.H.

**Graphics: 8 Sound: 6 Playability: 9
ABSOLUTE VALUE: 8 Price: £24.95**

YOU ASK FOR A **SPIRIT™** TECHNOLOGY BOARD

NO UNSIGHTLY BOXES – ALL INTERNAL

A500

501C upgrade QUALITY BOARDS NOT CHEAPOS – Without clock £79.00, With clock £89.00 2 meg internal board unpopulated £160.00. Populates in increments of 512k, one megabyte and two megabytes and uses one megabit chips.

2 meg populated is £460.00. 1.5 meg board unpopulated is £160.00.

SPECIAL OFFER 1.5 meg board with 1.5 meg of chips £299.00

A1000

1.5 meg board unpopulated £160.00 can be populated in 512k increments. 1.5 meg board and clock fully populated £325.00. (Fitting service and faster PAL chips and 68000 chips available).

ALL OUR INTERNAL EXPANSION BOARDS NOW COME WITH A BEEFIER 10 mhz 68000 PROCESSOR FITTED FREE

BRAND NEW! for the AMAX MAC EMULATOR. SPIRIT boards are recommended by the manufacturer to give you duality, either 1.5 meg fast ram (AMIGA) or 1 meg of contiguous chip memory (MAC EMULATOR). Contact us for existing board modification or new board price.

2000

8 meg board with 2 meg of chips installed for £425.00

Fast service with Registered Post. £2.00 on 501c £3.00 on other boards

We use new chips – not de-soldered from some 10 year old IBM.

HARD DRIVE SYSTEMS AND PART SYSTEMS

NOW WITH HARD DISK BACK-UP PROGRAM AND MANY UTILITIES

A500/A1000

These systems are ST506 type working under the fast file system and can autoboot under 1.3 kickstart. Very fast with even faster turbo cards available. Can support two hard drives. We can supply the bits and pieces to make your own system up if you have a spare drive doing nothing. Recently reviewed (one reviewer kept it weeks before we finally managed to wrinkle it out of him).

AMIGA USER INTERNATIONAL ".....quite breathtaking, just about the fastest you will see this side of 2,000 raw meaty power."

17 BIT SOFTWARE "VERY reliable ... you can build your own system up ... almost instantaneous access ... great!" We have unsolicited written letters praising our systems. Before you buy send for our leaflet explaining why some hard drives are not much faster than a floppy!!

40 meg system £499.00 70 meg system £750.00 102 meg system £825.00

IF YOU BOUGHT THE A590 WE CARRY THE SPECIAL CHIPS JUST FOR THIS HARD DRIVE'S MEMORY. CONTACT US FOR KEEN PRICES.

2000

Mounted on the card with same specification as above – 20 megs £350.00, 40 megs £399.00, 72 megs £699.00.

Other sizes are available for up to 300 megs. We can also supply the external case for full height drives with fan and power supply. Hard drive systems 24 hour carrier please add £11.00. Foreign orders please ask for rates of carriage on all products.

ANOTHER EXCLUSIVE ONLY FROM BYTES & PIECES!!

GET POSTSCRIPT QUALITY FROM YOUR PRINTER WITH ANY PRINTER – PRINTSCRIPT enables you to print with PostScript quality on your preferences printer, graphics support, rotate, half-tone images, encapsulate, PostScript clip art, AREXX port and more. Lots more PostScript fonts soon to be on the way, constant up-date service and on-line support. No need to ever visit a printer again, do it all 'in-house' with fantastic quality. Don't take our word for it, send an A4 size stamped and addressed envelope and we will send you samples of this amazing package. A PostScript printer is beyond the reach of most people but for £99 you can get PostScript output.

SOUND TRAP III

Quality from OMEGA Projects and exclusive to Bytes and Pieces. This one has to be heard to be believed. Why pay £80 ... £99 or £149 for a sampler when at £37.50 you can obtain quality comparable with the most expensive.

X-COPY NEW VERSION 2.0 JUST RELEASED AND WITH A MANUAL PROVIDED ONLY BY US now explaining how to use this great utility. Features now include a disk optimiser for floppies formatting in 30 secs, checkdisk, QED text editor, C.V. parameter, BRAND NEW front end screen and more goodies etc. £17.50 post free. To registered users with us to upgrade from version 1.3 send your disk, case and manual with a cheque/credit number for £2.50. This program is sold for lawful means only.

A500 fan cooled switch mode & very beefy power supplies £59.00 (exchange).

1.3 kickstart rom available only to buyers of our hard drives.

New 1 meg Fatter Agnus animation & video chip also available with full instructions – limited supplies as yet.

We now have dealers in Scandinavia, France and Denmark. Other North European countries we supply direct at present. We have been appointed agents and distributors for ALL Spirit Technology products. There are some exciting new products soon to be released!!

WE TAKE ACCESS AND VISA AND OUR HOURS OF BUSINESS ARE 11AM TO 6PM EACH DAY – CLOSED SUNDAY. Callers by appointment please. On line support given for ALL our products. Tel. Fax 0253-734218 or 0860-444816 (Chris), or 0860-254344 (Ken). Prices include VAT.

BYTES & PIECES

37 CECIL STREET, LYTHAM, LANCs FY8 5NN

UK AGENTS FOR SPIRIT TECHNOLOGY AND XETEC INC, USA; LEADMAN ELECTRONICS, TAIWAN

Mavis Beacon Teaches Typing

Mavis Beacon gives Len Keighley a few typing tips

When first using a computer one of the main problems that has to be overcome is the inability to type with any speed and accuracy. In the PC world there are a number of programs that teach the computer user touch-typing techniques. In some cases these are even available as shareware. Most of these, if not all, involve the typing of set pieces of text that in turn involve certain key patterns. This then slowly educates the hands to remain in a fixed position over the keyboard and the brain to remember where each key is placed without looking at the keyboard.

All of these programs have something in common, other than their purpose. They are boring to use and make the learning of touch-typing a chore. This may in fact, be responsible for the majority of computer users not being able to touch-type. Things are now changing. A piece of American software called 'Mavis Beacon Teaches Typing' has been produced by the Software Tool works company, publishers of Chessmaster 2000, and is being distributed by Electronic Arts. The package consists of a very sophisticated typing tutor which makes use of the computer's graphic capabilities to aid in the learning process.

The learning process is carried out in four main areas: the Chalkboard, the Classroom, the Workshop and the Arcade. The Chalkboard (American for Blackboard) is where Mavis will communicate with you, the trainee. Personal information must be entered so that the program can communicate, tailor the tests and keep your records. On the Chalkboard will be described the lesson that Mavis has suggested and the situation that this will help to remedy. At all times the lessons that Mavis presents are only a suggestion and they can be changed for something that you find more interesting.

The Classroom is where Mavis will

teach you the correct hand and key positions. The object is to type in the test that is displayed on the screen as accurately and as fast as possible. As you do so a pair of 'guide' hands displayed on the screen keyboard will also press the keys in the correct manner thereby showing you what your hands should be doing.

The Workshop is similar to the Classroom except that feedback information on your performances is provided, along with a metronome to help with your typing rhythm. The typing is again of text presented on screen and the 'guide' hands are also present.

The Arcade section is where the fun side of the package surfaces, while still retaining the training function. You are seated in a High Performance Road racer and are about to compete against the expert, 'Red Walter'. You control the speed of your racer by maintaining your typing speed and

'If you do not maintain your typing speed your car will slow and 'Red Walter' will pass and leave you in the dust.'

accuracy. The text to be typed is scrolled across the screen in the form of letter shaped vapour trails from a group of jet fighters. If you do not maintain your typing speed your car will slow and 'Red Walter' will pass and leave you in the dust.

All this makes the package seem quite simple and silly but its sophistication lies in the background work. Initially, at whatever entrance level you select (Beginner, Intermediate or Expert), Mavis will ask you to type some given text so that your personal typing characteristics can be established and a suitable training program presented. Once completed, all the sample texts will help you with those areas of the keyboard

with which you are having the most trouble. To ease the boredom the sample texts are selected from Historical quotes, riddles, rhymes, jokes and extracts from the Guinness Book of Records. Should you become bored with these you can also enter your own training text. All the 'Mavis' selected texts are tailored to your age group via the personal information.

The training records are extensive, with over 20 graphs which go down to the level of your typing speed on individual keys. Your typing speed and accuracy are tracked all through the training.

The PC package (the program is available for the Amiga and C64) comes on two 5 1/4' disks with a four page instruction booklet. There is also a 61 page book giving the history of typing, the basics of business typing and how to prepare a resume. As a special bonus there is an additional piece of software to help in the production of your resumé. The idea of this seems to be to encourage you to take up a career in typing once your training is complete.

The package is obviously aimed at the United States market and has won prizes in that area. It is unfair to call this program a typing tutor because it does attempt to go beyond this and teach some of the fundamentals of letter production and format as well. It is well-presented and takes a novel approach to what in the past has been a dry and dusty area.

This leaves one final point, who is Mavis Beacon? No mention is made of her in the text but there is a photograph of a lady on the box. Could this be her? Or is this a publishers joke? (*Publishers don't make jokes* — Ed)

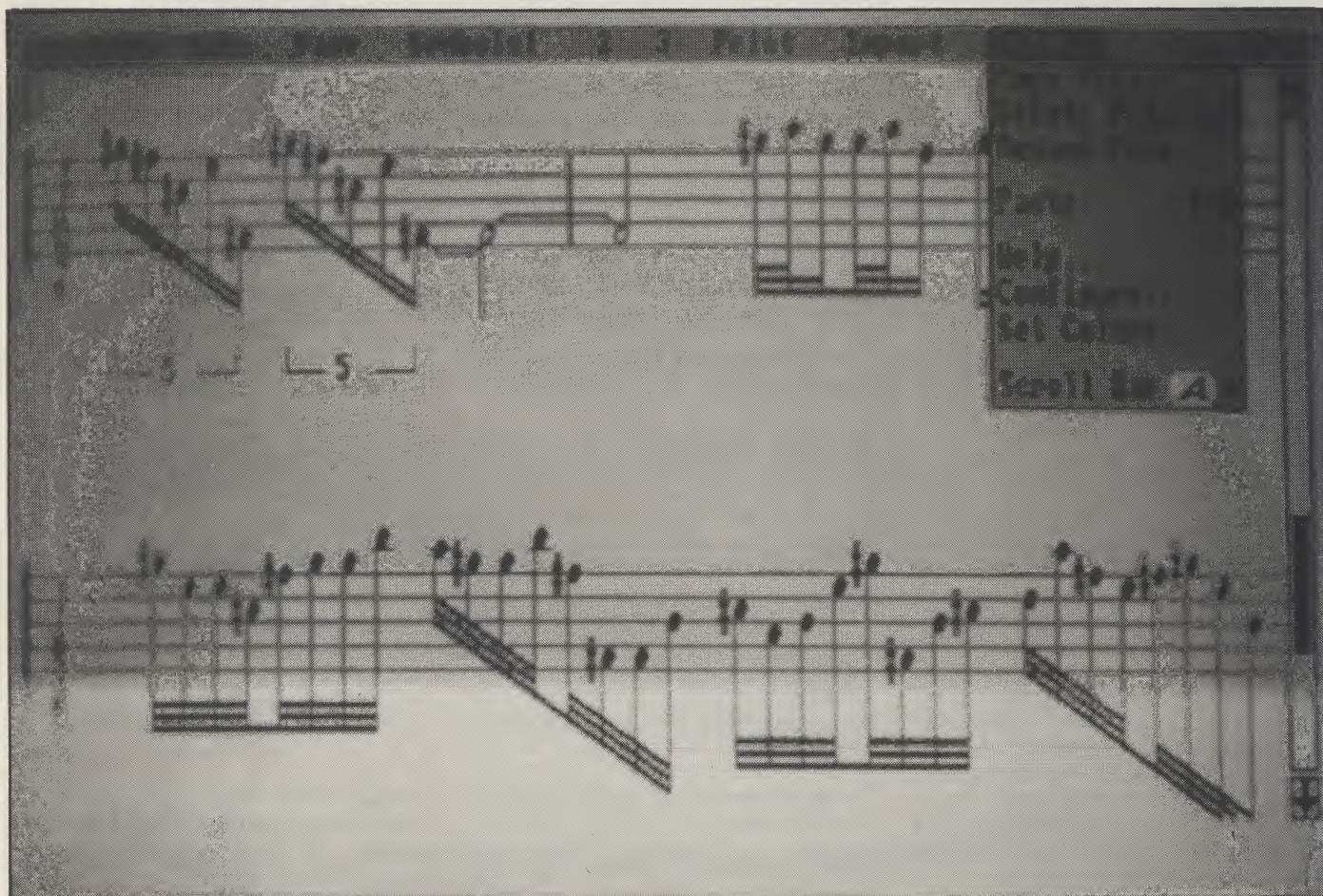
L.K.

Prices: PC £29.99; Amiga £29.99; CC4 (disk) £24.99. Contact: Mindscape, PO Box 1019, Lewes, East Sussex, BN8 4DW. Tel. (044) 486 545.

DR. T's MUSIC SOFTWARE COMPANY

The Amiga is still lagging behind the Atari ST as far as MIDI software goes, but despite the gap (which is decreasing) there are a few good Amiga MIDI products available. At the present time a surprising number of these come from a single source.... Dr. T's Music Software Company, so if you're still wondering who Dr. T is... here's your chance to find out!

Dr. T's Music Software started out in a very small way during the early 80's. The part time venture, which was originally set up by Emile Tobenfeld, has grown and matured to produce a company that has gained itself a solid reputation in the music world. They've been able to get, and keep, the right mix of musicians, programmers, and management to create a team which is able to consistently provide high quality software for both the professional and the serious amateur musician.



16 BIT CENTRE

ALL PRICES INCLUDE VAT AND COURIER SERVICE

CALLERS AND MAIL ORDER WELCOME

Open 9.00am to 6pm
Monday to Saturday

NEW LOW PRICE

AMIGA B2000,
XT BRIDGEBOARD,
PHILIPS 8833
MONITOR, 30mb. HARD DISK,
1.3 WORKBENCH, BASIC &
ROM ONLY £1299.00

COMMODORE A501
RAM EXPANSION
with clock
ONLY £115.00

AMIGA A500
ROM + WORKBENCH 1.3
Mouse, Modulator, Leads
ONLY £349.00

PRINTERS

Star LC-10 Mono £159.00
Star LC-24/10 £299.00
Citizen 120D £139.00
NEC P2200 £299.00
Citizen Swift Colour (24 pin)..... £349.00

All printers supplied with 1.8M lead
worth £7.99

HARDWARE

Amiga B2000, ROM 1.3 £950.00
Philips AV7300 TV Tuner £69.00
Futuresound 500 £79.00
A590 20mb Hard Drive Unpopulated..... £379.00
A590 20mb Hard Drive + 2 Megs of RAM £559.00
Minigen £92.00
Philips 8833 stereo colour monitor including lead..... £219.00
Commodore 1084 monitor including lead..... £199.00

Please phone for other hardware prices

SOFTWARE

The Works £73.00
Publishers Choice £79.00
Deluxe Paint III £65.00
Kind Words V2 £39.00

STORAGE + MEMORY

Target .5m Memory Expansion with Clock £74.75
Senator 3.5" Disk Drive, On/Off, Thru Port £89.00
Unpopulated .5m RAM Board with Clock £29.99
Sony DS/DD Box of 10 £12.95

NEW

Amiga Compatible 3.5" Disk Drive

- On/Off Switch
- Thru Port
- Slim Design
- Format to 880k.

Price only £74.95

LOW PRICE

Star LC 10 Colour Printer

- 8 Built in Fonts
- 120CPS Draft, 30 CPS NLQ
- Complete with Lead + Ribbon

Price only £199.00

AMIGA PACKS

Amiga A500 + A501 DPaint III £499.00
Amiga A500 + Philips 8833 Stereo Monitor (no modulator)..... £549.00
Amiga A500 Starter Pack inc 5 Games, Joystick, Workbench 1.3..... £369.00

All Amigas include Mouse, Power Supply, Manuals, Modulator, Workbench 1.3 and Kickstart 1.3.
Unless stated otherwise

16 BIT CENTRE

Unit 17, Lancashire Fittings Science Village

Claro Road, Harrogate HG1 4AF

Tel (0423) 531822/526322



The Company's first products were a sequencer called the KCS, and a patch editor – both for the Commodore 64. Nowadays the range still contains C64/128 software but also includes Amiga, Atari, Macintosh, Apple IIe and IBM PC software. As far as Amiga sequencing goes Dr. T's KCS sequencer is available, tried and tested, and it is good – which means that they are leaps and bounds ahead of other companies who have for some time been 'almost ready' to release professional quality MIDI software for the Amiga. KCS was ported to the Amiga by David Silver and it was this program, coupled with a robust implementation, that made a lot of musicians realize that decent Amiga MIDI software was beginning to appear at last. While we are talking about the KCS package we have heard a rumour that some new Amiga KCS facilities are on the way – we will let you know more about these once we have received full details.

"A range of editor/librarian packages are also available including the 'Caged Artist' editor packages."

The KCS program may be the most well known of the Dr. T packages but it is in fact only one of many offerings! A range of editor/librarian packages are almost available including the 'Caged Artist' editor packages. These let you edit, copy and save synthesizer voices and so make voice creation a much easier task. They are useful for setting up and controlling both keyboard synths and rack mounted modules and they include 'goodies' such as the ability to use randomizing masks, MIDI re-channeling, mouse glissando facilities and parameter print out.

"If you are into MIDI programming and interested in the sequencer file formats then KCS users can obtain them just by writing to Dr. T in the States"

The Caged Artist programs, such as DX-Heaven are easy to use. They offer mouse-controlled envelope shaping, provide a number of different ways to change the program parameters and it is even possible to load and edit sounds whilst playing the synth from a master

keyboard or sequencer. There are several options available for filtering etc., and the programs include a 'MIDI slow' facility so that gaps can be placed into the data stream – some synthesizers, such as the early DX7's, have trouble keeping up with fast SYSTEX MIDI transfer so this is a useful option to have available.

Editor/Librarian packages are available for most popular synthesizers, e.g.... Yamaha's DX7, TX7, TX812, TX816, FB01, DX100, DX27, DX21, Kawai's K3 and K5, Ensoniq's ESQ-1, Roland's D50, MT32, M6, Korg's DS8, DP-2000/3000 etc. The four operator version for the Yamaha FB-01/DX100 type range can also be used with the TX81Z polyphonic rack mounted synthesizer module – I have not yet had the chance to try this particular editor so I am not sure at the moment how well it integrates with the TX81Z's very comprehensive MIDI control facilities.

Dr. T's other products include



'Copyist Professional', (which **AUI** looked at last month), some algorithmic composer software packages, hardware such as MIDI interfaces and sync boxes and a host of other items aimed at the serious musician. They are quite a helpful bunch as well, e.g... if you are into MIDI programming and interested in the sequencer file formats then KCS users can obtain them just by writing to Dr. T in the States (a small charge is made for postage etc. – see the KCS manual for full details).

Dr. T's Music Software have already supported their products through two generations of computers and show every sign of continuing to keep up with the ever growing music market. Whatever computer you intend to be using in five years time you can bet your life that, if it is a popular model, Dr. T will be writing good MIDI software for it – and that, for a lot of musicians, makes Dr. T's Software a very good bet indeed.

P.A.O.

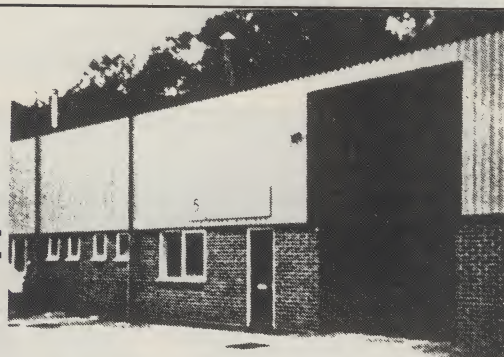
COMPOST

THE SOUTH'S LEADING COMPUTER BY POST SERVICE



CREDIT CARD MAIL ORDER

VISA



AMIGA A500 + FREE £220 SOFTWARE

- ZYNAPS • HELLBENT • KNIGHTORC
- MERCENARY • POWERPLAY
- CUSTODIAN • NEBULUS • SKY FIGHTER
- 20 OLD GAMES • MOUSE MAT
- BLANK DISKS • JOYSTICK

£329

AMIGA B2000

- INCLUDING:- MOUSE • WORKBENCH
• BASIC • UTILITIES • MANUALS

£799

AMIGA A500

INCLUDING:-

- MOUSE • WORKBENCH
- UTILITIES • MANUALS
- BASIC • TUTORIAL
- TV MODULATOR

£289

AMIGA A500/

1084(S) MONITOR

£469

AMIGA B2000

1084(S) MONITOR

£875

PRINTERS

Citizen 120D	£108	CP2200	£254
Citizen 180E	£126	NECP8+	£419
Citizen MSP15E	£189	NECP7+	£538
Citizen HQP40	£289	Panasonic KXP1081	£126
Citizen HQP45	£299	Panasonic KXP1180	£156
Epson LX400	£142	Panasonic KXP1124	£256
Epson LX850	£189	Star LC10	£129
Epson FX1050	£379	Star NX15	£289
Epson LQ400	£205	Star LC2410	£257
Epson LQ550	£272	Star XB2410	£418
Epson LQ850	£404	Star XB2415	£545
Epson LQ1050	£549	NECP7+ Colour	£823
Epson LQ2550	£847	Star LC10	£184
Epson DFX5000	£1078	Xerox 4020	£949
HP Deskjet	£449*		
HP Deskjet +	£544*		

THE STAIR
COMPUTER PRINTERS

LC10
£129

LC24-10
£250

LC10 COLOUR
£169

COLOUR PRINTERS

Citizen HQP40	£349
Citizen MSP50	£350
Citizen MSP55	£400
Hewlett Packard Paint Jet	£589*
NECP8+	£504

LASER PRINTERS

Brother HL-8e	£1409*
Epson GQ5000	
Hewlett Packard Laser Jet II	
Star LPB	£1248*

* Inc. 1 yr. on site maintenance

ACCESSORIES

AMIGA EXTERNAL DRIVES

AF880 3½ DRIVE	£89 inc
RF302C 3½ DRIVE	£85 inc
CUMANA CAX 354E	£99 inc
A1010 3½ DRIVE	£99 inc
No MD C30 3½ DRIVE	£85 inc

A2000 ACCESSORIES

20MB hard disk AMIGA or MSDOS	£399 inc
XT Bridge board	£399 + VAT
AT Bridge board	£675 + VAT
INT Genlock	£179 + VAT
5 MB RAM/B with 2 MB RAM 2nd Drive 3½	£75 + VAT

DRIVES

Triangle 20MB Hard disk	£459 + VAT
VORTEX A500	£510 inc
Hard disk 40MB	
Triangle 40MB Hard disk	£579 + VAT
Cumana CSA 394	£89 inc
Cumana CDA 358	£199 + VAT
Cumana IMB 51/4	£115 + VAT
External 2nd drives from	£85 inc
New A600 20MB A590HQ	£380 inc

MONITORS

CBM 1084S Stereo	£239 inc
CBM 1901	£149 inc
PHILIPS CM8852	£260 inc
CBM CGA Compatible Philips 6833	£229 inc
CBM 1900 Mono	£129 inc
ATARI 124 Mono	£129 inc
ATARI SC/1224	£259 inc

AMIGA ACCESSORIES

A501-512 KRAM	£129 inc
MOUSE MAT	£4.95 inc
AMIGA DUST COVER	£4.95 inc
TV MODULATOR	£21.95 inc
STEEL MONITOR	£15.95 inc
STANDARD AMIGA 5205T	
STEEL DOUBLE MONITOR STAND AMIGA ST	£25.95 inc

COMMODORE C64

C64 Hollywood Pack	£148 inc
C64 Home Entertainment Pack	£199 inc
1541 C11 51/4 C54 drive	£145 inc
1581 31/2/800K C64 drive	£129 inc
Oceanic 41/4 C64 drive	£125 inc



"Cor!
These prices
be well steamy!"

0202 292195

OPEN MON-SAT 10-5.30

ALL PRICES EXCLUDE VAT

Mail Order

DELIVERY UK MAINLAND

SAME DAY DELIVERY
CALL FOR DETAILS
CONSUMABLES £2 + VAT
HARDWARE 4 WORKING DAYS
£5 + VAT
NEXT WORKING DAY
£10 + VAT

Hot Line Phone 0202 292195

6 FOREST CLOSE
EBBLAKE IND ESTATES
VERWOOD
DORSET

UNIT 6, FOREST CLOSE, EBBLAKE IND ESTATE, VERWOOD, DOREST BH21 6DA

OPEN MONDAY-SATURDAY AM-5.30PM

P:A:S:E

Fine-tuning your animations may have been hit and miss until now, but Peter Lee looks at a new sequence editor which could be right on target

A look at any graphics software catalogue for the Amiga will show how much a professional tool the computer has become. There are plenty of hobbyist programs it is true, but a greater share of the market is being taken by products aimed squarely at the professional. The Amiga has found a foothold in the big league, and it shows in the software.

It also shows in the highly focused applications which have been created, in the specific and complex needs software developers are trying to satisfy, and also, it has to be said, in the cost. And, following this trend for top-quality, highly specialised software for use by people whose livelihoods depend on it, comes P:A:S:E, the professional animation sequence editor from Pure Graphics.

The program creates an environment in which animators can feel at home, giving total flexibility over cel animation and editing. It uses a sophisticated and initially complex front end to tailor-make your sequences down to the split-second.

"The main functions of the program are to create animation sequences from IFF files, and the playback and editing of the sequence created."

P:A:S:E runs in 512K in either PAL or NTSC (with a recommendation for additional RAM to improve your Amiga's graphics capabilities and animation lengths), and comes on one disk, which employs the keyword protection (entering a specific word from the manual); this enables you to make a backup, or install it on your hard drive - which gave me the only hiccup of the entire review.

The hard disk installation file failed twice through sloppiness, but I was

assured by Pure Graphics that this was in the process of being rectified. I simply did the job manually to overcome the problem (which included the P:A:S:E disk dumbly trying to copy a non-existent drawer from itself...)

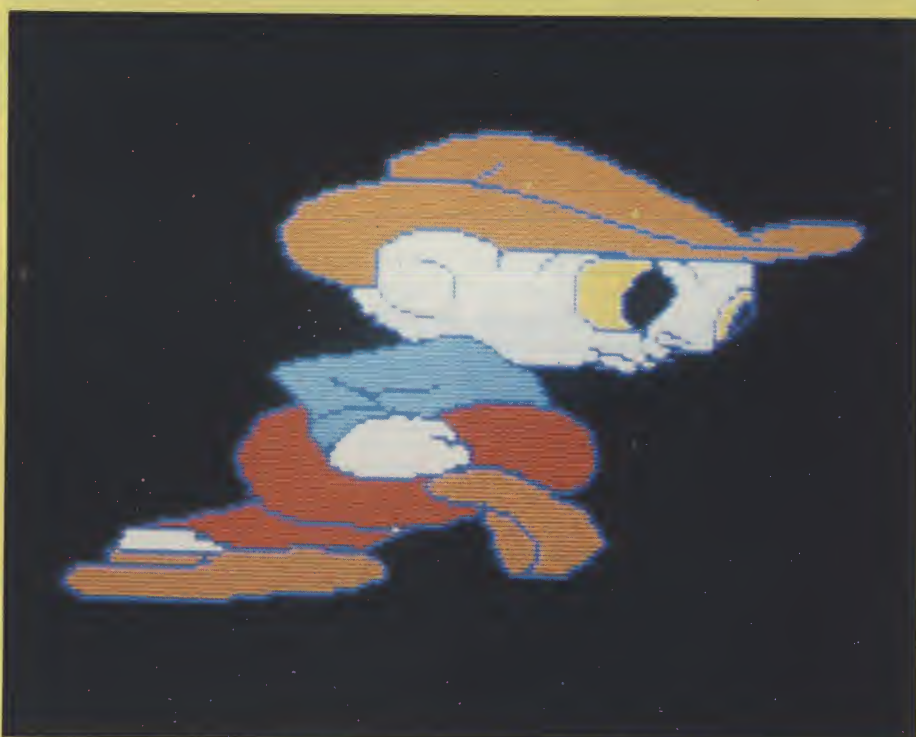
The actual control screen looks like it was designed by someone who is colour blind, featuring an insipid washed-out look; this is not merely a cosmetic gripe, because the amount of control options available on the screen is around 50, and you need all your wits about you.

Control is by mouse or keyboard shortcuts, with numeric parameters adjusted up or down by arrow gadgets. A small sub-screen can be called up, which overlays part of the display, but apart from this, all actions are governed from the one area, which does have its advantage.

The main functions of the program are to create animation sequences from IFF files, and the playback and editing of the sequence created.

The biggest problem I think the program currently faces is that it does not support the ANIM file format. I cannot conceive why a professional animation package should overlook this. There is a somewhat condescending mention in the manual of a possible ANIM file converter in the pipeline. But a more encouraging note was sounded by the company themselves who told me they were making efforts to include such a utility with the program; when that happens, registered owners will be informed.

The argument that P:A:S:E offers far more scope for manipulation in its current form does hold water - but I would have at least liked the option to run a



program to splice out the component frames from an ANIM file and save them ready for P:A:S:E.

The program uses as its prime source individual IFF frames, of any resolution admittedly, but this means it cannot load in the files in the ANIM format.

At startup, each frame is loaded in individually, and because of this the frames must follow a rigid filename format (pic00, pic02 and so on). Once inside P:A:S:E they are animated as fast as you could wish within the speed limits of the program itself, and once the editing is completed the script and the completed animation (composed of DAFs - that's Difference Algorithm File) is saved.

I am a big fan of the Sparta ANIM format; a lot of my software recognises this and panders to me. To get my anims into P:A:S:E I had to load them into either DPaint III or AniMagic, and re-save them a frame at a time - not the most progressive or productive way to spend a hot afternoon, believe me.

But personal prejudice aside, frames from any number of IFF programs can be saved to be animated - of course DPaint itself, Photon Paint, Videoscape, Digi Paint and so on - and then the program comes into its own in terms of animation.

"The display can be single or double buffered and the amount of time a frame is on screen can be individually set, or as a range of frames."

Once a series of frames has been loaded into memory (bearing in mind the constraint on frame numbering, which is vital for a successful automatic load), the editor comes into its own.

With it you can cut, copy and paste frames at any point in your animation, and set loop points to create a long sequence. The display can be single or double buffered and the amount of time a frame is on screen can be individually set, or as a range of frames.

The mechanics of editing are straightforward, aided by self-explanatory icons (scissors, camera etc); working with the contents of a buffer which you have filled with a single frame or a range, you can flip the frames (from last to first or vice versa) then 'glue' them on to your current animation.

As for looping, this could not be simpler, requiring simply start and end frames and the number of repetitions.

The step-time editing facility permits you to advance through your sequence a screen at a time, making any



adjustments to the dwell-time or loop point function.

P:A:S:E can use so-called Macros, which are simply sequences of DAFs (compressed frames) which are the saved contents of the clip buffer. They can be treated as animations in their own right, or appended to different ani-

"One outstanding feature of the editing facilities - and they are extremely valuable - is the Data option."

mations. Best use for this I found was for my end credit sequence, a sort of finale which can be added to any animation I create in the future. A nice feature is the ability to have frames replayed in their saved colour, regardless of what precedes or follows them. And if your current disk is full when saving, you are permitted to spill over frames into another volume, and this will be requested at the time of re-loading, preserving continuity.

A background frame can be selected from those loaded in, and the animations will play out against this.

One outstanding feature of the editing facilities - and they are all extremely valuable - is the Data option. Once activated, this will open up an information window onto your animation, which steps through with the press of a key on the numeric keypad. This has now become your editing console.

Information, which is updated as you scan from frame to frame, includes the frame number out of the total frame count, the dwell period, memory type (Fast or Chip), master speed, loop details and other important facts.

In step-time editing, the function keys assume control of the editor. Things tend to get complicated here, with some keys having dual roles (alone and in conjunction with the control key). But the manual clearly defines the keys, and though I would have welcomed a keypad, it only took 2 minutes to make my own.

Scripts can be saved in two forms - the FULL version, which includes all editable data, including room for planned P:A:S:E expansion modules, or ECON, which cuts down slightly on the amount of information saved but which is obviously quicker to re-load because it contains less data.

Even if you have expansion mem-

continued on page 60

continued from page 59

ory, if your animation is long, or chip memory low, the program has the intelligence to optimise allocation, giving you the opportunity to cram all your frames into Chip RAM for faster playback.

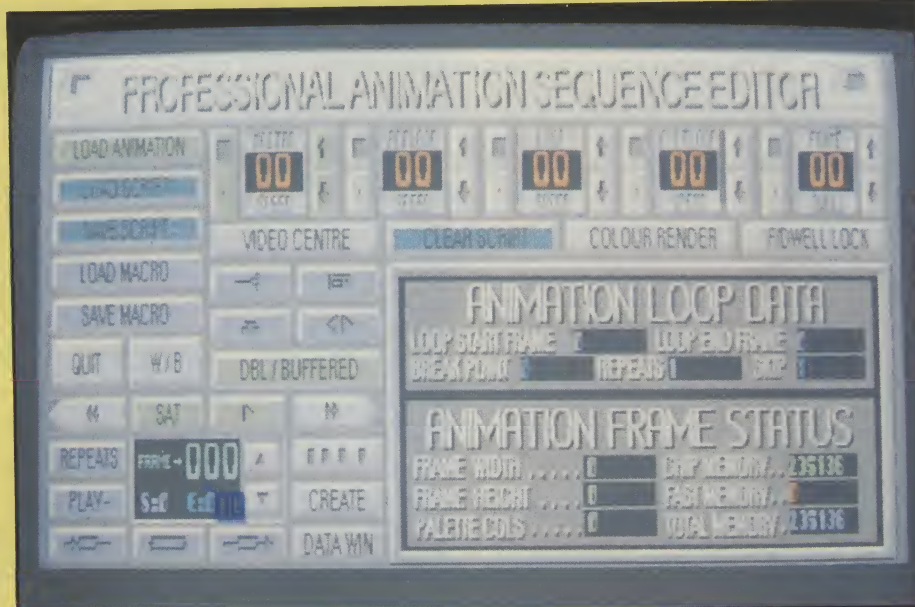
A nice feature is included called the Skip, which lets you move through your frames a set number at a time (if the skip is set to 3, every third frame only will be

"Another well-thought out option will permit the setting of a new centre for your animation."

displayed) which helps in fast-forwarding through sequences to test them. Another well-thought out option will permit the setting of a new centre point for your animation.

Accompanying the program is a freely-distributable DAF player program, which can be invoked from the CLI, and which you can use to pass on your animations to friends or associates. And in the pipeline are proposed addition modules for P:A:S:E which will allow the creation of an even more sophisticated utility.

The manual is almost as professional as the program, with one or two points lacking clarity (likewise the murky illustrations), and as a bonus for the



eco-minded it is printed on recycled paper.

CONCLUSION

Long before I was aware of P:A:S:E I had a desperate need for it. It is highly specific, but it fills a gaping need in the field of Amiga animation. Its flexibility is offset by a rather complex user interface, which could have had a bit more time spent on it both cosmetically and in design. I am told the problems about the

hard disk installation and the lack of an ANIM converter are to be resolved. Until they are I cannot whole-heartedly recommend the program. Other than that P:A:S:E hits the target bang on, and is an invaluable tool for the serious animator in need of a good editor.

P.L.

Price: £75.00 Contact: Pure Graphics, 239A Ivydale Road, London SE15 3DY. Tel. 01-358-0663

St. Louis

Hawaii

Paris

Tokyo

World of Flight

Travel the globe with the best in simulation software; UFO™, Flight Simulator™, ThunderChopper™, Jet™, and Stealth Mission™. Discover the world with Scenery Disks, Flight Controls I, and other supplements to our integrated flight line!

UFO, Flight Simulator, ThunderChopper, Jet, Stealth Mission, and Flight Controls I are trademarks of SubLOGIC Corp. IBM screens shown. Other computer versions may vary.

subLOGIC

Programming Tools - Part I

'Intuition Code Generators'

Paul Andreas Overaa starts a new series on programming tools to help you master your Amiga

There is little doubt that the Amiga is a complex computer. If you arrive with a background of Basic, or even experience with 8 bit assembly language then the chances are that the manuals will appear daunting to say the least. If that is not enough there are additional problems.... the Amiga simply does not tolerate bad, or 'slack',

"The home computer market has never seen anything which even closely resembles the sophistication which the Amiga embodies"

programmers. Because there is no hardware memory management it is down to the applications programs themselves to both respect and adhere to the conventions required in the software controlled multi-tasking environment. Still worse..... there is much fresh ground to cover and this includes learning to program in C before you even start to do any useful Amiga programming. Whether you like it or not you will need to understand the language simply because all of the Amiga manuals, and most books written for serious Amiga programmers, will assume that you are fluent in this language.

If this all sounds a bit frightening please don't be put off - once you are over the initial problems, things get

easier. The home computer market has never seen anything which even closely resembles the sophistication which the Amiga embodies so, if you do it the courtesy of understanding how it works, it will repay you time and time again.

One problem that you are likely to encounter right from the start is finding out how to receive information from, and send information to, the Amiga's WIMP orientated user interface. Commodore's Amiga uses an interface known as Intuition which supports a host of 'user friendly' items. A typical user 'communicates' with the Amiga by using such things as gadgets, requesters, menus etc., plus other input devices such as the mouse, keyboard or joystick. Intuition continually monitors this information using what it needs and passing the remainder on to any interested programs which are running.

Many programming practices, such as checking operating system calls to ensure that no problems have occurred, become important very early on - especially when they concern demands for specific resources from the operating system. The programs must deallocate such resources when they terminate or else the operating system will never know that the resources in question are no longer being used by that particular program. Wait loops, another common 8 bit programming technique are definitely a 'no-go' area. With a multi-process O/S they will tie up the proces-

sor unnecessarily and thus will degrade the overall performance of the system. Instead your program must ask the multi-tasking executive to allow the program to 'sleep' until something of

"Often you will find yourself wanting multiple windows, lots of gadgets, file requesters, and all sorts of other intuition based objects."

interest happens. Under such an arrangement the program will not use any processor time until a message from Intuition wakes it up with a message saying 'that event which you asked to be informed about has occurred'. The Amiga's message passing arrangement is quite fascinating but to start with all that one really needs to know is that a program can ask Intuition to give it messages on every input or time based event which could happen. Any single program is liable to be interested in only a small sub-set of all of the events passing through Intuition's event handling system..... by being selective about the types of events which it chooses to be told about a program can save itself the trouble of having to handle messages relating to things which it does not care about.

Are there any more headaches? Yes, I am afraid there is: In order to use

continued on page 62

continued from page 61

things like gadgets you need firstly to be able to set up Intuition's screens and windows and secondly you have to create all of the structures representing the gadgets and other items to be used by your application. *AUI* has covered, and is continuing to cover, details of the type of programming involved and to create and use an Intuition screen, a window, or a couple of gadgets, is not too much of a problem. The trouble usually begins when you start to create 'real programs', i.e. programs which aim to do something useful. Often you will find yourself wanting multiple windows, lots of gadgets, file requesters, and all sorts of other Intuition based objects. In isolation all of these types of structures are easy to create but, taken together, it is a different kettle of fish. The code relating to such objects often takes a long time to write and is prone to all sorts of 'silly' errors. Fortunately there are some Amiga program development tools around that do a good job in automating this particular area of the program development cycle. Power Windows and KGadget are two such tools and we shall make a start by looking at these products this month.

POWERWINDOWS

Version 2.5 of PowerWindows has recently been released by Inovatronics Incorporated. This not only supports the use of standard Amiga Intuition objects but provides the unique gadget and menu functions of the Company's 'InovaTools 1' package. Essentially it provides you, the programmer, with the ability to create and edit screens, windows, gadgets and menus using an 'object orientated' approach.

Screen definition is a straightforward job and PowerWindows supports both standard and custom screens. You can set the colour palette directly or can incorporate a palette from any convenient IFF file. Windows are equally easily created and, once present on the display, can be moved around and resized using normal mouse operations. Adding gadgets to a window is just a matter of selecting the 'add a gadget' menu option, adjusting the gadget's size and then moving it to the desired position. Menu generation is equally simple and although not often needed you can incorporate include IFF brush imagery with the menu.

One of the more powerful features of PowerWindows is the 'Grab A Window' menu option. When you select this option you are offered a menu which provides details of all of the screens and windows for all applications which are currently running. To grab a window you just select it's name and the window, plus all of the associated gadgets and menus, will be imported into PowerWindows. Only the window, text, gadget imagery etc., which is directly 'pointer

linked' to the window will be imported so sometimes you'll be disappointed with the results but this is nevertheless a very useful function. PowerWindows can also help with IDCMP event handling and this helps to develop a standardized approach for this type of code.

Once you are happy with the display, PowerWindows can do one of two things. Firstly it can generate an 'intermediate' file which contains the display data in a form which can be read back into PowerWindows itself - this enables you to edit the display at a later date. Secondly it can generate the source code that your own programs can use to produce an identical display. There are several options available for code generation (either commented or uncommented) to be used with 68K assembler, Lattice C, Manx C, Benchmark Modula 2, TDI Modula 2, Multi-FORTH, TrueBASIC, AmigaBASIC, and ACBASIC Compiler v1.3.

Full control of screen, window, gadget, menu, text and border characteristics coupled with many other extras such as gadget cloning, collision checking, colour re-mapping and image compression makes PowerWindows an extremely useful tool for the serious programmer.

KGADGET

KGadget comes from Kuma Software. It's been around for quite a while and although it doesn't have the same range of facilities as PowerWindows it remains a very useful utility. Again it adopts an 'object orientated' approach, i.e. gadgets are positioned by picking them up with the mouse and moving them to their required locations. KGadget handles the creation of all of the usual types of gadgets and can produce requester structures as well. To create a requester you simply pick up a requester template, adjust it's size and drag it to the required position. Having done that you can add gadgets to the requester by picking up 'gadget templates', and moving them into the requester window using the mouse. When you are happy with the display you ask KGadget to write the code for you. Again you have full access to gadget flags, text and border structures etc., and can save 'intermediate files' as well as generating the final source code. KGadget sets its sights lower than PowerWindows, but for many applications the end results can be identical. I have always found KGadget a convenient program to use and most of the standard requesters that I use in my own programs were created using this package.

GETTING RESULTS

Using a code generator for handling the Intuition Interface has many advantages. First and foremost it will save you time! Secondly you work with a display

that you can actually see as you create it. Thirdly you can, by keeping the reloadable 'intermediate files', go back at a later date and make any changes to the display which may become necessary, e.g. reposition gadgets or add extra menu items. Once the changes have been incorporated you just generate the new code, recompile and your new version will be up and running in a very short space of time! You can of course also use these types of tools to produce prototype interfaces to test ideas, or to quickly produce a 'rough and ready' skeleton interface which can be used to test and build your applications program. When you have finished your program you can then spend time creating a more presentable interface, generate the new interface code and just swap that for your preliminary version.

Whilst on the subject of code generators, don't forget that you can always 'tweak' the source code that has been produced to suit your own purposes. I often like to create general arrangements for things such as file requesters, and requester based 'yes/no type' confirmation boxes. To avoid name clashes when the utility chooses a default naming system for a series of objects I will often run the generated code through a text editor to change or globally prefix the names of the structures which were created.

Another good reason to 'modify' the generated code is to reduce its size. If for example you create a display with 24 identical gadgets each having a border then the generated code will have 24 identical border structures, one for each gadget. In such a case Intuition doesn't need 24 instances it will happily manage with one so the trick is to read the generated source into a text editor, remove 23 of the identical structures, and then change the border pointers in each of the 24 gadgets so that they all point to the single remaining border structure.

How good are the results? They are not bad at all! Figure 1 shows some C code generated by PowerWindows, Figure 2 shows a similar type of KGadget output, Figure 3 shows a utility program that uses a background IFF picture which has been read directly into the screen memory. By opening a full size borderless window containing all of the necessary gadgets the gadgets get superimposed on top of the underlying screen display... this is an approach that quite a few utility programs adopt. Lastly the display shown in figure 4 shows a code generator based requester in action!

P.A.O.

Prices: PowerWindows v2.5 £59.95 (inc VAT), KGadget £29.95 (inc VAT).

Contact: Enterprise House, Howards Grove, Southampton SO1 5PR. Tel: (0703) 703030.

XENON TECHNOLOGY

71, Wadham Road, North End, Portsmouth, Hampshire, PO2 9ED

MEGA '45' PRICES!

Amiga

MEGA '45' PRICES!

MAIL ORDER

(0705) 670878

MAIL ORDER

Title

Amiga

XENON II-MEGABLAST.....(Image Works)	£15.45
BATMAN THE MOVIE.....(Ocean)	£16.45
BLOODWYCH.....(Image Works)	£16.45
GEMINI WING.....(Virgin Games)	£13.45
LIFE & DEATH.....(Mindscape)	£17.45
STUNT CAR.....(Micro Status)	£13.45
SHINOBI.....(Virgin)	£13.45
A.P.B.(Tengen)	£13.45
XENOPHOBE.....(Micro Style)	£16.45
ROBOCOP.....(Ocean)	£16.45
BEACH VOLLEY.....(Ocean)	£16.45
INFESTATION.....(Psygnosis)	£16.45
MR. HELL.....(Firebird)	£16.45
F-16 COMBAT PILOT.....(Digital Int.)	£16.45
VIGILANTE.....(US Gold)	£13.45
DYNAMITE DUX.....(Activision)	£16.45
PAPERBOY.....(Elite)	£13.45
RICK DANGEROUS.....(Firebird)	£16.45
POPULOUS-PROMISED LANDS.....(E/A)	£ 6.45
LIGHT FORCE.....(Ocean)	£16.45
HONDA RVF750.....(Micro Style)	£15.45
RED LIGHTNING.....(US Gold)	£16.45
RAINBOW ISLAND.....(Firebird)	£16.45
INDIANA JONES/LC.....(Lucasfilm)	£13.45
THE NEW ZEALAND STORY.....(Ocean)	£16.45
IVANHOE.....(Ocean)	£16.45
FALCON MISSION DISK VOL 1.(Mirrorsoft)	£13.45
HIGHWAY PATROL.....(Infogrames)	£16.45
QUARTERBACK.....(Virgin)	£13.45
CABAL.....(Ocean)	£16.45
BATMAN THE MOVIE.....(Ocean)	£13.45
3D POOL.....(Firebird)	£16.45
ACTION FIGHTER.....(Firebird)	£16.45
BARBARIAN II.....(Palace)	£16.45
CASTLE WARRIOR.....(Delphine/Palace)	£16.45
CONFLICT IN EUROPE.....(PSS)	£16.45
FANTAVISION.....(Broderbund)	PHONE
GRAND PRIX CIRCUIT.....(Accolade)	£16.45
KRYPTON EGG.....(Hitsoft)	£13.45
LAST NINJA 2.....(System)	£16.45
LEISURE SUIT LARRY 2.....(Sierra)	PHONE
LEONARDO.....(Starbyte)	£13.45
MONOPOLY DELUXE.....(Leisure Genius)	£13.45

PASSING SHOT.....(Image Works)	£16.45
POWERDROME.....(Electronic Arts)	£16.45
PREDITOR.....(Activision)	£16.45
RAINBOW WARRIOR.....(Micro Style)	£16.45
SOCCER.....(Ocean)	£16.45
STAR WARS TRILOGY.....(Domark)	£16.45
STORMTROOPER.....(Creations)	£13.45
SUPER WONDERBOY.....(Activision)	£13.45
TRIVIAL PURSUIT II.....(Domark)	£13.45
VIRUS KILLER.....(Practical)	£ 6.45
WRANGLER.....(E.A.S.)	£13.45
XENOPHOBE.....(Microstyle)	£16.45

HARDWARE

A8802 (A500/A2000).....(Genlock)	£234.45
A8806 PROFESSIONAL (A500/A2000).....(Genlock)	£699.45
MINIGEN.....(Genlock)	£104.45
PERFECT VISION DIGITISER.....	£139.45
DIGI VIEW GOLD DIGITISER.....	£99.45
DIGI VIEW ADAPTOR DIGITISER.....	£18.45
SCANMASTER COLOUR SCANNER (COMPLETE SYSTEM INCLUDING COLOUR SCANNER, AMIGA INTERFACE & SOFTWARE)	
A3 (RRP £8,567.50).....	£7499.45
A4 (RRP £4,082.50).....	£3499.45
CORDLESS MOUSE (RRP £149.00).....	£119.45
DUAL SERIAL PORT BOARD (RRP £230.00).....	£189.45

SCULPT 4D PROFESSIONAL VR2.04

INTERACTIVE OBJECT EDITOR
ENHANCED USER INTERFACE
ENHANCED FILE REQUESTORS
POWER TOOLS
PROTRACTOR FOR ANGLES
GRIDS AND SNAP TO GRID
COORDINATE ENTRY
KEYSTROKE MACROS
KEYBOARD ENTRY OF 3D FONTS
CUT AND PASTE HIERARCHIES
RAYTRACING AND SCANLINE
KEYBOARD CONTROLLABLE ANIMATION SPEED
VARIABLE LENS CONTROL

TEXTURES SUCH AS METAL, GLASS, MIRROR
SELECTABLE PHONG SHADING
IMPROVED ANTI-ALIASING
UNATTENDED OPERATION MODES
SUPPORT FOR 68020/30 68881/2
NTSC/PAL SUPPORT
SUPPORT FOR FRAME BUFFERS
KEY FRAME ANIMATION
GLOBAL ANIMATION
HIERARCHIAL MOTION CONTROL
ANIMATION SCRIPTING LANGUAGE
REALTIME WIREFRAME PREVIEW
VARIABLE COLOURS, SURFACES AND TEXTURES
GENLOCKABLE TRI-VIEW EDITING

£279.45

SCULPT ANIMATE 4D JUNIOR.....	£69.45
SCULPT 3D VR1.102.....	£59.45

HARDWARE

A590 20MB AMIGA HARDDRIVE (AUTOBOOT).....	£349.45
CMOS RAM FOR A590.....	£13.45 each (128k)
512K (4 chips).....	£52.45
1MB (8 chips).....	£102.45
1½MB (12 chips).....	£154.45
2MB (16 chips).....	£199.45
3½" EXT DRIVE.....	£74.45
PRINTER CABLE.....(Centronics)	£4.45
MOUSE MAT.....	£3.45
DISK BOX (80).....	£5.45
COMBITEC A500 2MB MEMORY BOARD.....	£475.45

Xenon Technology, 71 Wadham Road, North End,
Portsmouth, Hampshire. PO2 9ED.

Telephone: (0705) 670878.

Please make all cheques or postal orders payable to
"Xenon Technology".

All prices include VAT, postage, packaging and a full
guarantee (please add £1.35 per item overseas).
All goods are dispatched within 24 hours (subject to
availability) by FIRST CLASS post.

Daily Double Horse Racing

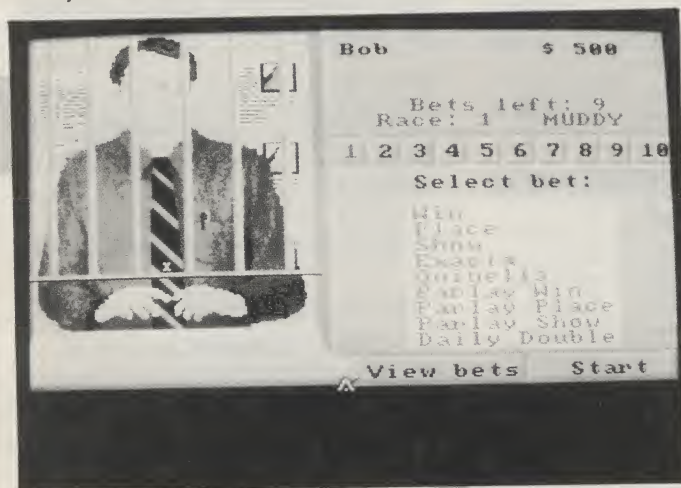
CDS Software

If you were given \$500 to spend, or do with whatever you please, would you take a gamble and maybe use the money as a stake on the horses? You would? You are then invited to spend a complete day at the races, courtesy of CDS Software. Some people are born lucky, whatever they seem to do with their money, they just seem to be able to make more and more money. If you think you may be one of these lucky people then you should at least try this horse racing simulation to see if you really are lucky. I am quite lucky myself, without having to risk losing lots of real money I have taken up the challenge of the Daily Double, and am now hooked on it.

CDS Software have turned out some quite good games for the Amiga including Colossus Chess, Steve Davis Snooker and Brian Clough's Football Fortunes to name but a few. This new game is of the same standard, high, but not totally mega brilliant.

The game comes with a Racing Newspaper that contains details of 180 different horses. All their history of previous races are recorded so you can ascertain their current form and how they have performed with different jockeys, over different distances and different going.

You can decide to make a bet on any horse in any race, there are several types of wagers you can lay,

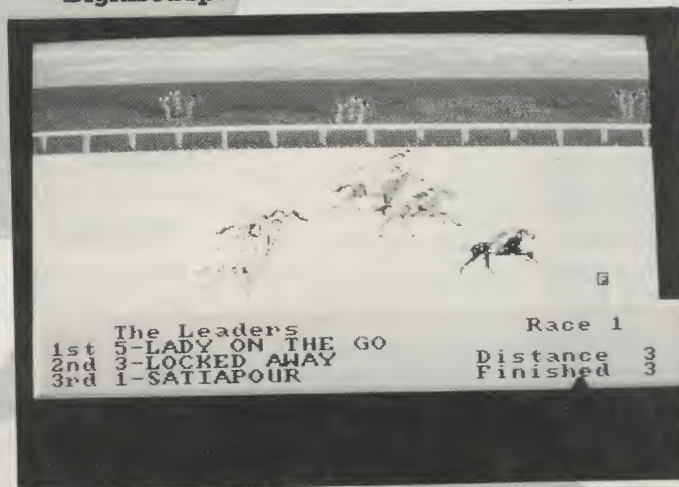


straight wagering for a win, place or show. Betting on two horses again allows other types of wagers such as exactas, parlays, quinella or the daily double.

Game controls are by the mouse, pointing to a

race number will display the field showing runners and riders with their odds. Up to four players may take part, each taking turns to pick out whatever takes their fancy. After choosing the type of bet you wish to lay then you hand over your stake money to the cashier at the bookies desk.

Digitised speech announces when "They're off!",



and again at the winning post after you have watched them thunder down the track to a thrilling finish "and the winner is number five" etc. You are given the choice of an instant replay of the final furlong, either normal speed or slow motion. The animated horses are quite realistic though nothing to write home about.

The form guide is very important, just as in real life. Time must be given to this study if you want to make the most of your money. There is a race card for a complete day at the course taking in ten races. In each race there are six horses, the distance raced varies from three furlongs to eight.

After each race the players names in turn are displayed showing what bet you placed and whatever winnings you have to come to you. Good luck! You will need it.

Overall, Daily Double is good value for money, entertaining and has all the possibilities of leading you down the rocky road that all gamblers walk. Towards riches or rack and ruin, who knows?

B.C.

Graphics: 7 Sound: 7 Playability: 8
ABSOLUTE VALUE: 7 Price: £19.99

G2 VideoCenter

A complete Television Production Center in one compact unit.

FEATURES

- Video Mixing
- Fade to Black
- Genlocking
- PAL/NTSC Encoding
- Fully S-VHS Compatible
- Professional Performance
- RGB Buffered Output
- Software Controllable



APPLICATIONS

- TV Captions
- Interactive Video
- Information Systems
- Video Graphics
- Advertising
- Training
- Education
- Security Systems

The G2 VideoCenter simply plugs into the Amiga 500, 1000 or 2000 to give the facilities of a Professional Video Mixer, Genlocker and PAL/NTSC Encoder.



The G2 VideoCenter mixes an incoming video signal with the Amiga output. High quality sliding faders control both fade to black and the level of mix. Fading can also be controlled by software which is included



with the unit. A filtered and buffered RGB output allows the connection of an RGB monitor or other external device. Special YC inputs and outputs ensure top performance when used with S-VHS format recorders.



Amiga is a TradeMark of Commodore Computers. "VideoCenter" and "G2 Systems" are Trade Marks of G2 Systems.

The G2 VideoCenter is supplied by "The Video Specialists" Digipro Ltd. On Southampton (0703) 703030 or London (01) 905 1030 - FAX (0703) 266301

Amiga Centre East Anglia



**Amiga 2000
Graphics Workstations**

MICRON COMPUTER CENTRE LTD

41 Crouch Street,

Colchester, Essex CO3 3EN

Tel: (0206) 769398

VAT Reg. No. 512 4568 61



**Amiga 500
Home Computers**

East Anglia's Most Amazing Computer Shop!

**CAD/CAM DTP
VIDEO PRODUCTION
ART WORKSTATIONS
A-MAX EMULATOR
AT BRIDGEBOARD**



AUTHORISED DEALER

**COMPLETE SOLUTIONS
FOR ALL COMPUTING
PROBLEMS**

CALL IN FOR A DEMONSTRATION

OOZE!

DRAGONWARE ARE FAST BECOMING GERMANY'S PREMIER ADVENTURE SOFTWARE HOUSE, AND ARE PUSHING 'OOZE' IN A BIG WAY. ANDY MOSS CHECKS IT OUT, CHEESEBURGERS AND ALL.

E XTRACT FROM CHEEZ BURGERS DIARY AUGUST 1982.....

Today was one of those days- you know, bad from start to finish.

I'm usually a very deep sleeper, nothing wakes me, but last night I was woken by.... well, some strange noises. Creaking floorboards and the like. I could not sleep a wink after that. I sat listening in the darkness. At one point I reached for my gun. I crept around found the light switch and.. nothing!

The damn noise was getting louder, glancing at the window it was glowing blue! Carfax seemed to be shrouded in a swirling fog which had an eerie blue tint to it. Then the old church clock struck one... As I watched, the fog seemed to disappear, and then I noticed...nothing! Not a sound. I told myself to go back to bed and forget all about it, and that it was a dream.

By morning I wasn't convinced.

AUGUST 17

This morning I heard three voices in the library.

Perhaps it was ghosts?

A book fell on the floor, and then another, and with each step I took, I could hear more books falling. I threw open the door, but couldn't believe my eyes, there was nothing there apart from some books, and three empty bottles of wine.

AUGUST 20

Tonight I will lie in wait and find out just who enters my home without my permission and give them a surprise....

THE DIARY ENDS HERE APART FROM SOME SPIDERY WRITING WHICH SAYS

Cheez, we are so sorry. You were the first human who did not want to send us away. You were our friend. You should not have died like that. But now at least we will be friends for good. Forgive us our weakness, that we could not help you

Yours Ludus.

° Sinister goings on indeed! Just what fate has befallen old Cheez Burger at Carfax Abbey? What is Ooze? Is Vino really an old drunken ghost? Just

On the front-porch.

(c) 1989 DRAGONWARE



my feet. I look around but there's nothing - just some trees in the shadows. "Must be the end of the world", I think indignantly, walking over the moaning boards to the door.

♦ You dont need glasses

Ooze - Creepy nites.

(c) 1989 DRAGONWARE



VERM ROOM.

♦ Uugh stuff, man!

♦ Nitty comment from photographer

some of the questions to be answered in Dragonware's latest adventure 'OOZE', the first in a series of CREEPY NITES programs.

You play the part of Cheez Burger's nephew Ham (Hamburger get it?)

who has been informed that since Cheez has passed away he has inherited Carfax Abbey and all that goes with it.

The adventure opens with you armed with just your uncle's diary standing outside the gates to the old mansion plucking up the courage to enter the dilapidated gloomy old place.

From then on things go from bad to worse as far as your character is concerned, while the actual adventure is remarkably well written and presented. It seemed that your uncle was a bit of a spiritual Doctor Doolittle in that instead of talking to the animals, he managed to make friends with all the ghosts that lived in the Abbey! They tell him that they are in the grip of a tyrant called Ooze, a master of evil, who appeared one night and took over. He and his loyal minions rule Carfax Abbey now and anyone, ghost or mortal, who opposes him will perish. So, mixed up with all the spirits in the house are bad ghosts, ordinary ghosts and good hosts - like Vino, Slime, Ludus and Holunder. They will prove useful to you in battling Ooze, but first you have to win them over - after all, you are not Cheez, are you? Of course your problem is extended, because you don't know who is who - yet!

That then gives you an overall picture of the plot. How does it all come together? The screen layout is in three sections. The topline shows which location

you are in. Underneath comes the variable graphics window (mag scrolls style) and under that comes the text.

Talking of graphics, they are very nicely drawn with some atmospheric sound FX to go with them. My only criticism is that the sound is heard before the text or illustration has appeared, which is a bit like bolting the door before the horse has arrived and tends to spoil the unknown event somewhat.

The parser is confident enough to deal with most requests and finds a sentence like 'pick up the book, the bag and the pencil, now place the coat on the table, quickly climb the stairs in the east and look around' a piece of cake.

Thankfully, my famous key/open door/which door/which key routine which is played by Infocom and Mag Scrolls is not here. The program accepts that you open the door with the key as long as you are carrying it. I will not give away any secrets here, but be prepared for many instant deaths, from things not of this world, which means save as you go very frequently and soon things will start to fall into place (literally!). Examine everything, you never know what is hiding behind that couch or under that blanket now do you?

In the game box comes Cheez Burger's complete diary wherein I suspect lie more than a few clues for any aspiring adventurer to find, although it took me a while to dig them out. This is the most impressive Dragonware adventure I have seen to date, with lots more promised and I recommend playing it with all the lights out and have something nearby to bite on!.

A.M.

MicroBotics means Amiga-Power™

Whichever Amiga you own—or plan to buy—we have the expansion you need

For the
Amiga 2000...

HardFrame/2000

DMA SCSI Interface

If your application calls for super-speed uninterrupted access to your hard disk, HardFrame/2000 is your answer. This is a high end, no holds barred SCSI interface that operates at bus speeds. One HardFrame/2000 can support up to seven devices. Word-length data transfer, FIFO buffering, TRUE DMA, mounted on a metal frame suitable for all standard 3.5" SCSI drives (or, if you prefer, connected to a bay mounted or external disk). Available now.

Suggested Price: SEE LIST

8-UP! FastRAM

Maximum Memory in One Slot!

The FastRAM card that every Amiga owner will eventually come to – why limit yourself to only two megabytes per slot? 8-UP! will take you all the way to the top of the auto-configuration memory space of EIGHT MEGABYTES! 8-UP! is available in two versions, the standard DIP model accepts 2,4,6 or 8 megabytes of 1 meg DRAMS. For maximum flexibility there is the SIMM version which lets you custom configure with mixed 256k and 1 meg SIMM modules, including MicroBotics exclusive PopSIMMs. 8-UP! is a power-efficient, zero wait state, autoconfiguring design. "The latest and greatest" (Amiga World, Jan. 1989). 8-UP! is available now.

Suggested Price: SEE LIST

MouseTime

The easiest to use, most cost-effective implementation of a battery backed clock for the A1000. Passes the port through for joysticks or other devices. Complete with WorkBench software. Available now.

Suggested Price: SEE LIST

For the
Amiga 500...

M501 Memory + Clock

Half a Meg at a Great Price!

As we are all coming to realise, a one megabyte Amiga (at least) is a necessity not an option. When you add the inboard 512k memory and clock module to your A500 make sure it's a MicroBotics M501. Note that just like the Commodore and unlike some third party expansions, we use a long lived rechargeable NiCad battery – which you'll never have to replace. Set the MicroBotics clock using the same WorkBench software as you would use for the Commodore clock. What's the difference? You get to keep £25 compared to the Commodore version. The M501 is available now.

Suggested Price: SEE LIST

StarBoard2/500

Two Megs PLUS a Choice of Modules.

The premier memory expansion for the A1000 is now available on the A500. In its own case with an independent power supply strong enough to handle StarBoard2 and a second A1000 style StarBoard2, all the power and flexibility of this great expansion device is available to you. Up to 2 megabytes of autoconfiguring, zero wait state FastRAM, MultiFunction or SCSI module capability for math chip or fast SCSI hard disk interfacing. StarBoard2 also has an LED diagnostic/confidence light to indicate the power-up state of your Amiga and expansion. An A1000 style StarBoard2 can be connected to the bus pass-up for a total of FOUR megs and two modules. "The best ..." (Amiga World, Jan. 88).

Suggested Price: SEE LIST



For the
Amiga 1000...

StarBoard2

The Expansion of Choice

The superb memory expansion for the Amiga 1000, still going strong! Up to 2 megabytes of autoconfiguring, zero wait state, FastRAM in a sleek, all steel Amiga coloured case plus the capability to accept either of the two daughterboard modules, the original MultiFunction Module or the new SCSI Module. StarBoard2 is powered by the bus (up to two StarBoard2's can be supported by the A1000) and passes it on.

Suggested Price: SEE LIST

MultiFunction Module

High Tech at Low Cost

This daughterboard installs on any StarBoard2. It features a socket and software for the 68881 Math Chip as an I/O device (MicroBotics pioneered this approach on the Amiga – now directly supported in the maths libraries of AmigaDOS 1.3). StickyDisk gives you the most "bullet-proof" rebootable RAM disk – its hardware protection turns it into a solid state, superfast disk. Parity checking of StarBoard2 RAM can be enabled when extra parity ram is installed. Finally the MultiFunction Module carries an easy to use battery-backed clock to set the system time on startup.

Suggested Price: SEE LIST

StarDrive SCSI Module

Fast, Low Cost SCSI Module

When installed in any mode StarBoard2, StarDrive offers you cost effective, pseudo-DMA access to SCSI hard drives and other devices. Fast easy to install including driver software and disk diagnostics. StarDrive also includes a battery backed clock to set system time on startup.

Suggested Price: SEE LIST

Tell your dealer he can order direct – no minimum quantity – show him this ad!

In Europe: Oasis Services Ltd., 17 Andrews Place, London SE9 2SJ. TEL: (01) 859 4936

In U.S.A.: MicroBotics, Inc., 8111 Alpha Drive, Richardson TX 75081. TEL: (214) 437 5330

Oasis Services Ltd.

17 Andrews Place, London SE9 2SJ.

Telephone: (01) 859 4936

Current Retail Pricing — All MicroBotics Products

Exc. VAT Inc. VAT

MouseTime Amiga 1000 Clock

22.50 25.88

M501 512k RAM + Clock for Amiga 500

86.91 99.95

M501 Unpopulated (0k)

39.95 45.94

StarBoard2 for Amiga 500 & 1000:

Unpopulated (0k)

199.00 228.85

Populated to 512k

274.00 315.10

Populated to 1Mb

349.00 401.35

Upper Deck 0k

39.00 44.85

Upper Deck 1Mb

179.00 205.85

StarBoard2 + Upper Deck: Total 2Mb

499.00 573.85

Modules for StarBoard2:

MultiFunction Module for Math Co-Proc.

55.00 63.25

StarDrive SCSI Interface

75.00 86.25

8-UP! Memory Boards for Amiga 2000:

DIP Version:

Unpopulated (0k)

149.00 171.35

Populated to 2Mb

399.00 458.85

Populated to 4Mb

699.00 803.85

Populated to 6Mb

999.00 1148.85

Populated to 8Mb

1249.00 1436.35

SIMM Version:

Unpopulated (0k)

149.00 171.35

PopSimms:

Each Unpopulated (0k)

16.00 18.40

Each Populated to 1Mb

165.00 189.75

Set of Four Unpopulated (0k)

60.00 69.00

Set of Four Populated to 4Mb

600.00 690.00

HardFrame/2000 The No.1 in Amiga 2000 SCSI controllers:

Card Only without Frame

199.00 228.85

Card with Metal Frame

219.00 251.85

32Mb,28ms Seagate on Frame

499.00 573.85

48Mb,28ms Seagate on Frame

549.00 631.35

Other Drives

Please Call



Paragon/Micropose

In *Twilight's Ransom*, a graphic adventure, imported from America, you only have 12 hours to find out who has kidnapped your girlfriend, why they would pick on a seemingly, poor Salvadorian waitress, where she is being held and, finally, try to formulate a plan to rescue her.

The game is produced by American software house Paragon Software but has, recently, been licensed by Micropose and distributed on their Medalist label.

The package arrives with two disks, a short manual and two trinkets which serve as clues. The first is a piece of paper with scrawled, meaningless

writing on it along with a tourist leaflet of Liberty City.

You play Ron Mulligan, a young artist employed by an advertising agency in Liberty City. Your girlfriend, Maria Chavez, works, or rather worked, at a popular Hispanic restaurant. You have only known each other for a few months and what with you working all day and Maria working all night, along with her evening classes you have not had much chance to, well, be alone together, as it were. It was on that night, when, at last, you would be able to spend some time together, that you find the door of Maria's flat wide open and the flat ransacked. It is while picking through the debris that the telephone rings...

Success in *Twilight* often seems to lean more on your ability to manipulate game saves and handle all of the objects than on your ability to deduce answers or to remain calm under pressure.

The parser is good, handling just about everything I threw at it. So, for example, it would accept, "Break the window with the brick. Take the watch, then climb up the fire escape" plus the use of IT, "Take the rock then throw it through the window".

The writers have, apparently, learned their lessons well from their predecessors because the locations of the objects needed for both Maria and your character are both logical and inventive. The uses of various objects are both surprising and practical.



The graphics, while not up to the best of, say, *Magnetic Scrolls*, are reasonably good. However, they are strictly icing on the cake. They do not play any interactive role. As this is the Amiga version, *Twilight* enables you to use the Say speech utility.

Twilight's Ransom does not break any new ground, as far as adventuring goes. However, that is not a negative criticism it is just a little unusual for a "glossy" software house not to spout some new feature or other.

The essential elements of adventuring are well designed. Atmosphere, puzzle quality and logicity are well implemented. It would have been nice to have a map as part of the packaging.

Paragon, as well as *Twilight*, have another title licensed under Microprose's Medalist label. *Guardians of Infinity: To Save Kennedy* is an adventure in the style *Infocom's Suspended*. Only available on PC, at the moment, it deals with the hypothesis that Kennedy was never meant to be assassinated. It is, so far as we can find, the only leisure-based product to be programmed in Prolog, the artificial intelligence language.

Paragon has an agreement to portray Captain America, Spiderman and Doctor Doom, in a long range project which will attempt to combine arcade action with the artistic quality of the Marvel comics in which the characters appear.



I am not too sure about the time limit, it has never been one of my favourite aspects in any adventure, although that is purely a matter of taste. But the game is certainly worth recommending. The one big problem is cost. If you wish to buy *Twilight* you could hang on and hope that Microprose bring the game over here. If you cannot wait contact: Computer Adventure World, Bank Buildings, 1A Charing Cross, Birkenhead, L41 6EJ. Tel:051-666-1132.

P.R.

Graphics: 7 Sound: N/A Playability: 8
ABSOLUTE VALUE: 6 Price: £34.95



THE PERSONAL COMPUTER SHOW

27 SEPT-1 OCT 1989
EARLS COURT LONDON

HEARD IT ON THE GRAPEVINE

Although the organisers would have you believe the PC show is an exhibition of entirely business-orientated products, it is still without doubt *the* event of the computer gaming year. With a few major software houses opting out of a stand at the show, preferring to meet the press at their own do's, speculation that the rest would follow suit has come to nothing. Rather than conspicuous by their absence, as some had commented in the past, those not attending this year's were merely absent. The extravagant set-ups from Ocean and US Gold among others, made sure that out of sight was definitely out of mind.

On entering the immense hall at Earls Court, I couldn't help noticing a lack of tarty young women in silver mini-skirts. Those girls have come in for a lot of flak recently, but you have to admire someone who can keep up a cheesy grin, when for the last six hours they've been handing out leaflets to thousands of computer buffs, many of whom are strangers to the concepts of dress sense and personal hygiene.

Looking beyond the very business-like, yawn-inducing stands at the entrance, it was immediately obvious that Ocean had



not squandered their floor-space. A huge video wall ran loud promo videos of their forthcoming attractions, spliced with movie clips from their box office tie-ins. Last year they



OCEAN'S CHASE HQ

had an armoured car on the stand. This year it was a couple of immaculate American motors. During the current American 50's revival, it would be quite trendy to reel off the names, years of manufacture and chassis numbers of these desirable hot rods, but I'll admit to not having a clue what they were. That's the kind of square I am. A walk-through arcade was showing off the coin-op versions of their much publicised yuletide-to-come releases, all on free-play as usual.

Strolling through the arcade and out the other side, it was all too easy to miss Elite's modest effort. A single A500 running Paperboy couldn't hope to compete with the Mancunian mountain that overshadowed it. In these occasional patches of no-

man's land, the less splendid exhibitors lent the show a flavour of the old time ZX Microfairs, not crammed with market stalls selling the latest releases at unbelievable prices, but small businesses showing off all manner of graphic and sonic digitisers, labour-saving gadgets and assorted other clever little black boxes.

"US Gold, like Ocean, had none of their games available for playtesting. Instead they chose to pull the crowds with a sizeable collection of appropriate coin-ops."

Each pocket of gizmo stands was regularly punctuated by the giants of the games market. US Gold, like Ocean, had none of their games available for playtesting. Instead they chose to pull the crowds with a sizeable collection of appropriate coin-ops. Pushing their Turbo Outrun license was a Ferrari Testarossa parked up beside the stand (maybe someone should have told them Tur-

side coin-op cabinets. What they were not showing on the stand was Space Ace, the follow up to Dragon's Lair. Featuring bags of digitised speech and music, Space Ace continues in the interactive cartoon theme. A second helping of those amazing graphics is on the way, but this time I'm promised there will be some gameplay. No playable versions have yet made it across from

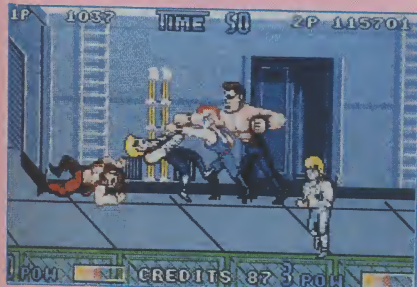
from Marvel Comics, and Time, the next from the creators of Sleeping Gods Lie.

"Accolade were there too, giving testers of imminent releases with their promo-video."

Accolade were there too, giving tasters of imminent releases with their promo-video. Blue Angels was one that sounded promising. It's a formation flight simulation, putting you in a team of expert demonstration pilots. A handful of exterior views can be selected in preference to the cockpit view, as you attempt a

Donning his Show suit, Tony Horgan hunted the aisles of the Personal Computer Show, picking up the whispers of the games world future. Here is what he heard...

bo Outrun features the new F40). I suppose I shouldn't be too hard on them, as they were running a competition to win the coin-op itself. Not only that, their ample PR team more than made up for the lack of grinning girlies at the entrance. I'm not that gullible though. I know they only want me for my column inches.



VIRGINS DOUBLE DRAGON II

If it was a taste of things to come you wanted, the Virgin stand was an essential stop. Playable demos of the 16-bit versions of Continental Circus, Double Dragon II and Ninja Warriors were all on show, and looking pretty good in their various states of completion. Hewson were another offering playable previews. Stormlord is looking particularly pretty, with some excellently detailed sprites and background features, although the gameplay is identical to the 8-bit versions. Hard Drivin was also there for the playing on the Domark stand. Apart from a slight reduction in the amount of visible features, it's hardly distinguishable from the coin-op, running at a very respectable speed, just below that of the original.

Titus combined the playable preview and free-play coin-op ideas, fitting their current range in-

the Canadian Readysoft, who hope to have it finished by the end of October. Gazza's Super Soccer is



GAZZA'S SUPER SOCCER

another footie game, but it does have something different on offer. Action around the centre of the pitch is viewed side-on, but goalmouth play is seen from the centre of the pitch, looking directly towards the goal. Sounds to me like a cop out from the programmers who couldn't scroll the screen, but I'm assured that it improves the gameplay no-end. Others to be releases on the Empire label include Dr Doom, licensed



string of gut-wrenching manoeuvres, before watching it all again in the action replay mode.

There were a few things missing from the show, other than the few absent software houses and promotional beauties. Free carrier bags were in short supply compared to recent years, and previews of megagames destined to be scrapped in three years' time were thin on the ground. A few old faves could be found if you looked hard enough. Damocles was being previewed again, Jeff Minter was doing weird things with multi-coloured pixels, and DTP salesmen were doing their best to sound authoritative, whilst giving their sales pitch to a packed house of two. You missed it? Don't worry, there'll be another one along in around twelve months.

T.H.

SPACE ACE



THE 
PERSONAL
COMPUTER
SHOW

27 SEPT-1 OCT 1989
EARLS COURT LONDON

HEARD IT ON THE GRAPEVINE 2

Who wasn't there...

Mirrorsoft were one of the few who decided to give Earls Court a miss. Instead they made the opportunist move of inviting the gathered press to their own get-together at a nearby hotel. Here they announced an interesting line-up across their five labels, including the next from the Bitmap Bros, and Image Works' first film tie-in.

Cadaver is to be a bit of a departure for the Bros. It's described as a fantasy roleplaying arcade adventure, with all the fiddly bits removed. A mass murderer is on the run, and he's already slaughtered the search party originally contracted to bring him in. A strong, brave, quick-witted man like yourself is needed to track and kill this menace. Isometric 3D graphics up to

the usual Bros standard are promised, as is plenty of spell manipulation and monster bashing.

More spooky going on are to be found in **Theme Park Mystery**. The Scooby Doo style plot involves the "Magic Canyon" theme park, which you recently inherited after the death of your Grandfather. All the staff have left, and no-one has visited the park since rumours circulated of some kind of curse upon the park. They say whatever it is drove your Grandfather crazy, so it's with some trepidation that you set about rebuilding the business. Details of the gameplay are scarce, but it will be an arcade adventure, which Mirrorsoft claim will take the industry by storm (where have I heard that before?).

Their first movie tie-in is lined up

for release in early 1990. **Back to the Future II - Paradox**, sees Marty McFly in a spot of bother in the year 2015. When Marty finds records of the main sporting results of the twentieth century, he's tempted to travel back in time and win a fortune at the bookie's. Doc, the nutty inventor of the time-travelling DeLorean, talks him out of tinkering with his destiny, but Bif has other ideas. It's up to you once again to make sure the preordained sequence of events go ahead as planned.

It Came From The Desert is still "nearing completion". It follows similar lines to previous Cinemaware games, with a mix of stunning stills, strategic elements and arcade sections. The plot is a parody of the laughably un-scary horror films of the fifties. Lizard Breath was a sleepy town in the middle of the Arizona desert. Nothing much ever happened, until a meteor landed nearby, radiating a field which caused the local ant population to grow to enormous proportions. Ever the mug, you set out to put a stop to the overgrown bugs.



Following on from the Falcon mission disk are three more from Sepctrum Holobyte. **Vette** gives you the opportunity of a joyride around San Fransisco in a sleek new Corvette. All the city's streets are said to have been recreated, along with the hills and famous landmarks. A variety of views, both interior and exterior, plus the option of a two player head-to-head are just a couple of the features which Mirrorsoft reckon will make it the hottest driving simulation around.

Combining the flight sim and wargame genres is **Flight of the Intruder**, licenced from the US best-selling book of the same name. The player gets to direct his men on the battlefield, whilst doing his bit in ariel combat. Yet more wartime adventures are on the menu with



M1 TANK PLATOON

Tank. The same old Yankees vs. Reds scenario has you leading your company, platoon or just yourself into the solid 3D battlefield. As in Vette, your perspectives can be switched from the handful of internal views to "spotter plane" views for an immediate assessment of the situation.

Others not taking a stand at the show this year included Activision. Nevertheless, they have a meah looking line-up for Christmas. Sega's amazing **Power Drift** is coming along very nicely in its Amiga format. Obviously it could never move as smoothly as the unbelievably powerful coin-op, but other than that it looks very close to the original. Sampled sound effects including the coin-ops speech will be included to keep the authentic arcade feel. **Altered Beast** has just been completed, and **Ghostbusters II** is almost there.

Microprose, who last year had the most spectacular stand with an

amazing 'real life' simulator, played it cool with only an upstairs hospitality

MICRO PROSE
SIMULATION • SOFTWARE

suite. Major Wild Bill Stealey with the recent departure of Stuart Bell, now taking a hands-on management role in Microprose, tells us they have some 'Microprose standard' (he means top quality) releases to come shortly. **M1 Tank Platoon** and **Stunt Car Racer** was the charge to be followed by **F15 Strike Eagle II** and **Pirates** on the Amiga - with all new sparkling graphics.

Finally, a couple of late items of interest are that Jez San's potential world-beating flight simulation, codenamed 'Hawk', for Electronic Arts who were at the 'nearby hotel', is now very near to completion, and Jeff ('I still love Llamas') Minter has announced plans for an Amiga conversion of his ST "Light Synthesiser" Trip-a-tron.



HE WASN'T THERE EITHER! ↑

PASSING SHOT

Image Works

Anyone for tennis? You cannot be serious man! This is an excellent conversion to the Amiga of the Sega coin-op simulation. The really crucial graphical feature of any computer ball game played in 3D, has to be the ability of the player easily to perceive just where the ball is in the air at any time. Well, this game has just that, I must say that it is

"You will more than enjoy this game, you will love it!"

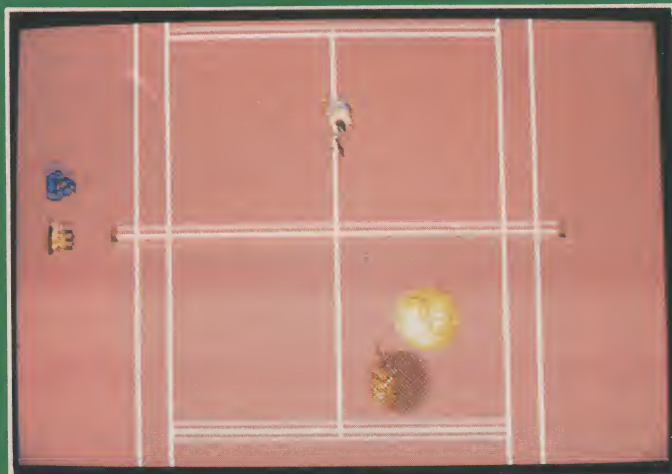
very easy to judge the ball and makes playing Passing Shot all the more enjoyable.

I suppose that the sport of tennis has quite a lot to answer for in the world of computer games. I remember about fifteen years ago, the very first games that simple computers generated were of the 2D tennis "Ping Pong" type. Passing Shot bears only a slight "passing resemblance" to its predecessors.

More recent 3D tennis simulations, in particular there were quite a few for the C64, all suffered from the inability to judge correctly the 3D flight of the ball easily and so spoiled the enjoyment of the player. You will more than enjoy this game, you will love it!

There is a single player game where one plays against the computer, or a two player game of doubles where both players play as a doubles team also against the computer.

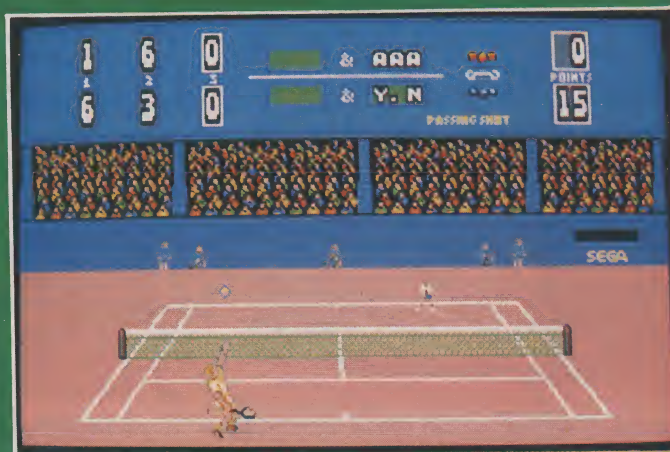
So as to make it quick and easy to progress, you play only the final set in any match. When starting, you may choose one of four levels of difficulty, each level takes you to a different location in the world and playing on different court surfaces, such as clay



or grass.

The view of the court when serving is from behind your baseline, this changes once the serve has been hit to an overhead view. This aspect is similar to Microprose Soccer or Speedball. Those of you familiar with these games will have no difficulty getting used to this overhead view.

You have quite a lot of control over the racquet head when striking the ball. There are four types of strokes, flat, slice, topspin or lob. Passing Shot follows all the normal rules of tennis and incorporates all the usual features, double -faults, body touches, direct returns, aces, service aces etc. You are required to reach six games to win the match, this puts you through to the next round taking place at another location around the world.



Rather good digitised speech samples call out the faults like "double fault" or "out" ... The ball was in man! There's no arguing with this game. On the bad side, there is a mistake in the program, if your first service goes into the net you will loose the point so watch out! I wish that it was possible to play singles against another friend rather than as a team.

The graphics are good, the sound isn't bad either, the playability really makes this program great. Most of you will be able to progress through to the tougher stages early on. The play gets faster and harder but with practice you can get to the top.

I really enjoyed playing Passing Shot, I hope you will too, let's end the domination of Becker and Graf!

B.C.

Graphics: 7 Sound: 6 Playability: 8
ABSOLUTE VALUE: 7 Price: £24.99

Mr Heli

Firebird

Despite the success of R-Type, Irem have remained a relatively small player in the coin-op world. They have yet to come up with anything to beat R-Type, but Mr Heli still proved very popular with a modest number of arcade-goers. The Amiga conversion has arrived via Probe.

The ecological balance of a once green and pleasant planet has been disrupted. An evil scientist calling himself "The Muddy" is behind it all, and the Cosmic Heli Patrol have sent you on a mission to restore order. This Muddy guy is a feeble coward, and he doesn't kid himself that he is any Rambo. That is why he has built himself a robot army to defend against any interfering do-gooders. Fortunately, the

"Mr Heli is a helicopter gunship which pilots itself and comes fitted with three weapons systems."

Cosmic Heli Patrol have strong counter-measures: you. Mr Heli is a helicopter gunship which pilots itself and comes fitted with three weapons systems.

Muddy has sent out fleets of mobile droids and set up anti-aircraft guns all over the planet. The floating platforms and narrow tunnels make avoiding the plentiful flak that bit harder. The best way to cut down the amount of missiles flying through the air is obviously to take out the launchers. An unexpanded Mr Heli is equipped with both an upward and forward firing cannon, so there is always sufficient firepower for a fighting chance of survival. You also get a supply of grenades for bombing ground features. The crumbly rocks found all over the multi-directionally scrolling lands often conceal

valuable crystals. These can be collected and traded in for extra weapons.

The levels combine push-scrolling with forced-scrolling sections, so there is also the occasional danger of being squashed between the scenery and

"The whole thing has a more claustrophobic feel to it than the coin-op due to the reduced scrolling window."

the edge of the screen. The whole thing has a more claustrophobic feel to it than the coin-op due to the reduced scrolling window. It's also slower and a lot less fluid than I had hoped for. On the good side, most of the graphics are neatly drawn and very colourful,



fairly accurate copies of the arcade machine's. Sound effects are good and zappy, though a little lacking in variety, and the music suffices.

In general Mr Heli's difficulty is well graded. It is quite easy compared to most shoot 'em ups, which is no bad thing as it will appeal most to younger players. Technical standards mean a lot in a shoot 'em up, and Mr Heli cannot match those set by the Amiga versions of R-Type and Xenon II. Gameplay is more sluggish and less frantic as a result, but looking on the bright side, that could be a blessing for less experienced joystick jokeys. It is a pleasant little game, but unless you can afford both, my vote has to go to the Bitmap's Xenon II.

T.H.



Graphics: 6 Sound: 6 Playability: 6
ABSOLUTE VALUE: 6 Price: £24.95

Dynamite Dux

Activision

They may look ever so cute and cuddly, but when their best chum was whipped away to the lair of some evil wizard, Pin and Bin turned nasty. No-one kidnaps these ducks' friends and gets away with it, as that old meanie was about to discover.

It just happens that the two heros are boxing champs, so they are not afraid of a bit of fisticuffs. If you thought ducks were a strange choice for the central roles, take a look at some of the enemies. As you waddle from left to right along the scrolling levels, your first encounter is with a pack of dis-

"Mid-level and end of level monsters take the biggest toll on your lives, and vary from rockmen, to fire-demons and Chinese dragons."

embodied dog heads. These are pretty weak, and a biff on the nose is enough to put them out for the count. A short way on, the dog heads are joined by gangs of bouncing moose heads. The more tightly packed groups can be taken out in one go with a super-punch. Hold down the button and your on-screen persona winds up a massive hook, which



destroys anything unlucky enough to be on the receiving end.

Further on, the attacks become too intense for even these two unarmed ducks. Not to worry though, as there are plenty of rocks, bazookas, bombs and



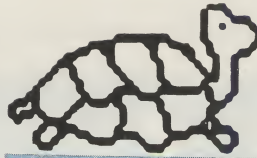
water-pistols lying around. Supplies of each are limited, but as one runs out, another usually presents itself. The homing-missile launcher is one of most effective, with the flamethrower coming a close second. Mid-level and end of level monsters take the biggest toll on your lives, and vary from rockmen, to fire-demons and Chinese dragons. Through the levels, the scenery changes from cities to jungles and so on, but the layouts themselves are only slightly altered. Later on, the enemies start using missile launchers, and some extremely irritating gophers keep popping up from underneath you, relieving you of a few more energy units.

Everything moves smoothly enough, including the scrolling. The sprites are basic but colourful, but the backgrounds could be more convincing. There is a slight problem with occasionally unresponsive controls, but on the whole it plays well. What it lacks however, is excitement. It seems to me that an arcade game that generates no excitement is a waste of time. The continue play feature can encourage lazy playing, as you know you have still another credit or two in hand. Of course that is your decision, but the plentiful stock of lives and untaxing gameplay means you can lose enthusiasm half way through a game. If all you want is simple, uncluttered gameplay, or you're into the coin-op, give it a chance. Otherwise, your money's better spent elsewhere.

T.H.

Graphics: 6 Sound: 4 Playability: 5
ABSOLUTE VALUE: 5 Price: £24.99

TURTLESOFT



0476-
591040

TURTLESOFT AMIGA PACK AMIGA A500

Free TV Modulator Free Paint Prog
Free Software the following titles:-
Amegas/Art of Chess/Bugby Boy/Barbarian
Ikari Warriors/Insanity Fight/Mercenary/
Terrorpods/Wizball/Thundercats

£399.95 INC VAT FREE DELIVERY!

TURTLESOFT PRINTERS

Citizen 120D NLQ	£149.95
Panasonic KXP-1081 NLQ	£169.95
MP165 ++ NLQ 165CPS	£199.95
Star LC-10	£219.95
Star LC-10 Colour	£259.95
Seikosha SP-180AI	£169.95
Seikosha SP-1200AI	£189.95
Seikosha SL-80AI 24 Pin	£339.95

TURTLESOFT AMIGA MONITORS

New A1084S Hires Col Mon	£259.95
Philips CM8833 Col Mon	£259.95

TURTLESOFT DISC DRIVES

Cumana CAX354 880k 3.5" Drive
Now with On-Off Switch

£89.95 INC VAT FREE DELIVERY!!

TURTLESOFT 3.5" DISC BONANZA

10 DSDD + Library Case	£10.95
10 DSDD Quality Branded	£16.95
20 DSDD + Lockable Disc Box	£20.95
20 DFDD + Library Case	£18.95
40 DSDD + Lockable Disc Box	£39.95
50 DSDD + Lockable Disc Box	£47.95
80 DSDD + Lockable Disc Box	£69.95

MOUSE MATS SPECIAL PRICE £3.95

Disk Cleaning Kits only £4.95
Amiga Dust Covers from £8.95
Lockable Storage Box (holds 40 3.5"
disks) £6.95
Mouse Brackets £2.95
Amiga Joystick Extension (pair) £6.95

JOYSTICKS

Crystal Joystick Turbo
ONLY £16.95
Arcade Joystick
£16.95

AMIGA GAMES SOFTWARE

	Retail Price	Our Price
3D Pool	£24.95	£15.95
Allen Syndrome	£24.95	£16.95
American Ice Hockey	£24.95	£16.95
Amiga Gold Hits	£24.95	£16.95
Amiga Gold Hits II	£24.95	£16.95
APB	£19.95	£14.95
Balance of Power 1990	£22.95	£20.95
Ballistix	£19.95	£13.95
Barbarian II	£24.95	£16.95
Battletech	£29.95	£20.95
Bards Tale II	£24.95	£16.95
Lords of the Rising Sun	£29.95	£20.95
Battlechess	£24.95	£17.95
Blastroids	£24.95	£16.95
Forgotten Worlds	£24.95	£16.95
Bombuzal	£19.99	£13.95
California Games	£19.95	£13.95
Castle Warrior	£19.95	£14.95
Conflict Europe	£24.95	£17.95
Grand Master Slam	£19.95	£13.95
Chessmaster 2000	£24.95	£9.99
Chuckie Egg	£19.95	£13.95
Chuckie Egg II	£19.95	£13.95
Gunship	£24.95	£16.95
Cosmic Pilot	Phone	
Dragon's Lair (1 meg)	£49.99	£34.95
Dungeon Master (1 Mb only)	£24.95	£16.95
Earl Weavers Baseball	£24.95	£16.95
Archipelagos	£24.95	£16.95
Emerald Mine	£14.95	£10.49
Emerald Mines II	£14.95	£10.49
Skweek	£19.95	£15.95
F-16 Combat Pilot	£24.95	£16.95
F-16 Falcon	£29.95	£20.95
F-16 Falcon Mission Disk	£19.95	£14.95
Face Off	£14.95	£10.49
Ferrari Formula One	£24.95	£16.95
Flight Simulator II	£39.95	£27.95
Football Manager 2	£19.95	£13.95
Football Manager 2 (Expon. kit)	£12.99	£10.49
Forgotten Worlds	£24.95	£16.95
Fright Night	£24.95	£16.95
Fusion	£24.95	£16.95
Gemini Wing	Phone	
Gilbert's Escape From Drill	£19.95	£13.95
Grand Prix Circuit	£24.95	£16.95
Galdregon's Domain	£19.95	£13.95
Microprose Soccer	£24.95	£16.95
Journey	£24.95	£19.95
Outrun	£24.95	£19.95
Heroes of the Lance	£24.99	£19.95
HKM	£14.99	£10.49

AMIGA GAMES SOFTWARE

	Retail Price	Our Price
Hostages	£24.95	£16.95
Indiana Jones The Game	£24.95	£16.95
Indiana Jones The Adventure	£24.95	£16.95
Man Hunter	£24.95	£16.95
Jet (SC/Disc Compatible)	£39.95	£27.95
Test Drive II	£24.95	£16.95
Kennedy Approach	£24.95	£16.95
King Arthur	£24.95	£16.95
Kult	Phone	
Kool	£24.95	£16.95
Super Cars (Data Disk)	£11.95	£8.95
Kings Quest III	£24.95	£16.95
Krystal (The)	£24.95	£16.95
Let Sleeping Gods Lie	£29.99	£20.95
Leaderboard Collection Birdie	Phone	
Dragon Ninja	£24.95	£19.95
Lombard RAC Rally	£24.95	£16.95
Manhunter in New York	£24.95	£16.95
MegaPack (Tynesoft)	£29.95	£20.95
Silk Worm	£24.95	£16.95
Music Construction Set	£24.95	£16.95
Nam Moves	£19.99	£15.95
New Zealand Story	£24.95	£16.95
Night Hunter	£24.95	£16.95
Operation Neptune	£24.95	£16.95
Operation Wolf	£24.95	£16.95
Dark Side	£24.95	£16.95
Pacmania	£19.95	£17.95
Personal Nightmare	£29.95	£13.95
Phobia	£19.95	£13.95
Phantom Fighter	Phone	
Pioneer Plague	£19.99	£13.95
Populous	£24.95	£16.95
Populous Data Disk	£24.95	£18.95
Paperboy	£15.95	£9.99
Powerdrome	£24.95	£17.95
Precious Metal	£24.95	£16.95
Purple Saturn Day	£24.95	£16.95
Blood Money	£24.95	£16.95
Quantox	£14.95	£10.49
Question of Sport	£19.95	£13.95
Questron	£24.99	£16.95
Raffles	£24.95	£16.95
R-Type	£24.99	£16.95
Reach For the Stars	£24.95	£16.95
Battlehawks 1942	£29.95	£20.95
Robocop	£24.95	£16.95
Rocket Ranger	£29.99	£20.95
Rock'n' Roll	£24.95	£16.95
F.O.F.T.	£29.95	£21.95
Rick Dangerous	£24.95	£16.95
RVF Honda	£24.95	£16.95

AMIGA GAMES SOFTWARE

	Retail Price	Our Price
Run The Gauntlet	£24.95	£16.95
Millennium 2.2	Phone	
Scenery Disc 11	£24.95	£16.95
Scenery Disc 7	£24.95	£16.95
Scenery Disc Japan	£19.95	£13.95
Scenery Disc W/European	£19.95	£13.95
Scrabble Deluxe	£19.95	£13.95
Scorpio	£19.95	£9.99
Time Scanner	£24.95	£17.95
Shoot 'Em Up Con Set	£29.95	£20.95
Kick Off	£19.95	£13.95
Hollywood Poker Pro	£24.95	£16.95
Speed Ball	£24.95	£16.95
Star Fleet 1	£24.95	£16.95
Star Glider II	£24.95	£16.95
HawkEye	£19.95	£13.95
Strip Poker 2 Plus	£14.95	£10.49
Strip Poker Plus 2 Data Disc 1	£9.99	£6.99
Super Hang-On	£24.95	£16.95
Superman	£24.95	£16.95
Super Scramble Simulator	£24.95	£15.95
Sword of Sodan	£24.99	£16.95
Times of Lore	£24.95	£16.95
Steve Davis Snooker	£19.95	£13.95
Teenage Queen	£19.95	£13.95
The Last Duel	£14.99	£10.49
Demon's Winter	£24.95	£16.95
The Real Ghostbusters	£24.95	£16.95
Red Heat	£24.95	£16.95
Thunderbirds	£24.95	£16.95
Tom and Jerry	Phone	
Tiger Road	£19.99	£15.95
Time and Magic	£19.95	£13.95
Track Suit Manager	£19.95	£13.95
Turbo Cup	£19.99	£13.95
Turbo Tracks	£19.95	£13.95
TV Sports Football	£29.95	£21.95
Ultima IV	£24.95	£16.95
Ultimate Golf	£19.99	£15.95
Virus	£19.95	£13.95
Voyager	£24.95	£16.95
Vigilante	Phone	
Waterloo	£29.95	£19.95
Wanted	£19.95	£13.95
War in Middle Earth	£19.95	£13.95
Weird Dreams	£24.99	£16.95
Wrangler	£14.95	£10.49
Xybots	£24.95	£15.95
Zak McKracken	£24.95	£16.95
Zany Golf	£24.95	£16.95
Zork Zero	£29.95	£20.95
Zenon II	Phone	

AMIGA SOFTWARE BUSINESS/UTILITY/GRAPHIC/SOUND

	Retail Price	Our Price
Aegis Animator/Images	£103.50	£83.95
Aegis Audio Master	£46.00	£36.95
Aegis Diga (Comma S/Ware)	£59.95	£46.95
Aegis Draw-Plus	£198.95	£156.95
Aegis Impact	£63.25	£51.95
Aegis VideoScape 3-D	£143.75	£116.99
CL/mate	£39.95	£31.95
Delux Arts Part 1 Data Disc	£9.99	£6.99
Delux Arts Part 2 Data Disc	£9.99	£6.99
Delux Hot & Cool Jazz D/Disco	£9.99	£6.99
Delux Music Construction	£69.95	£49.95
Delux Paint I	£69.95	£49.95
Delux Paint II	£79.95	£56.95
Delux Print II	£49.95	£35.95
Delux Video	£69.95	£49.95
Delux Photo Lab	£69.95	£49.95

AMIGA SOFTWARE BUSINESS/UTILITY/GRAPHIC/SOUND

	Retail Price	Our Price
Devpack Assembler	£59.95	£41.95
Digi Paint	£59.95	£41.95
Instant Music	£24.95	£16.95
K-Seka 68000 Assembler	£49.95	£36.95
Workbench 1.3	£19.95	£13.95
Logistix V1.2 SP/DB/GR (1MB)	£114.95	£89.95
MCC Shell	£49.95	£35.95
Micro Base	£19.95	£12.95
Micro Text	£19.95	£12.95
Modula 2 (Standard)	£99.95	£77.95
Modula 2 (Developers)	£149.95	£116.99
Rock'n'Roll (Data Disk)	£9.99	£6.99
Page Setter	£79.95	£64.95
Photon Paint	£69.95	£49.95
Pro Sound Designer (S/W & H/W)	£79.95	£62.99
Pro Sound Designer (S/W Only)	£34.95	£27.95
Publishing Plus DTP	£99.95	£82.95
Ragestream	£149.95	£116.99

AMIGA SOFTWARE BUSINESS/UTILITY/GRAPHIC/SOUND

	Retail Price	Our Price
Superbase Personal	£59.95	£45.95
Superbase Professional	£249.95	£189.95
Superplan	£99.95	£74.95
Transformer	£49.95	£29.95
TV * Show	£69.95	£56.95
TV * Text	£69.95	£56.95
VIP Professional	£99.95	£77.95
Visawrite Desktop	£99.95	£69.95
Word Perfect V4.1	£228.85	£179.95
Write & File (WP/DB needs 1MB)	£99.95	£77.95
X Copy	£29.95	£23.95
Zuma Fonts Vol 1, 2 & 3	£39.95	£33.95
FunSchool (Under 6)	£19.99	£16.95
FunSchool (6-8)	£19.99	£16.95
FunSchool (Over 8)	£19.99	£16.95



Software & small items sent 1st Class Post. Cheques require 7 days for clearance. Please make cheques payable to TurtleSoft
Hardware items sent by overnight courier - Now free of charge Please ring for availability of new software items

Post: Send Cheques/PO or Visa/Access details to the address below. Phone: Call (0476) 591040. 24 Hour Service with your Visa/Access details
TurtleSoft, Dept. AMC6, Unit 3, The Old Malthouse, Springfield Road, Grantham, Lincs. NG31 7SE
Subject to availability, all items are despatched within 24 hours. E&OE

POPULOUS THE PROMISED LANDS

Electronic Arts

Bob Collyer loves playing God...again

The production team at Bullfrog have not rested on their laurels after their chart topping success recently with Populous. Far from it, they have been very busy creating a new supplementary Data Disk called "The Promised Lands". The resulting program gives an existing owner of Populous the chance to play at being God over even better landscapes and five different populations for only £9.99.

The original game has been with us now for just a few months. It was heralded then as a completely new concept in computer gameplay, as a "Divine Being", you had complete control over your flock of followers. If you wanted to, you had the power to create natural disasters anywhere in your world taking the form of earthquakes, floods, swamps or even volcanoes that would make it extremely difficult for your opposing Deity to establish his colonies of followers.

On the other hand you had the ability to flatten vast areas of land that could be cultivated and built on making it ideal for your followers to prosper. The masses could be directed in several ways, either to establish settlements or make a pilgrimage to your Papal Magnet. You could make all your walkers gather together making them stronger or send them



out to battle with opposing walkers that stray into your area.

Once you gain the power, you may produce fighting knights that will go straight out to battle. These fierce fighters will go directly to your opponents lands and kill walkers and burn their houses (sounds just like English football fans to me!). These knights have the ability to make you the one and only ruler of the world, so their job is to cause complete destruction to your opposition until they are completely annihilated. (World War II put an end to the similar idea someone else had 50 years ago.) Maybe if Amigas had been around in those days Hitler might have been content with Populous and the Promised Lands Data Disk.

There are five new landscapes and five new sets of populations on the data disk. To use them is easy as all you have to do is choose "Custom Game" and "Paint Map", you originally had just landscapes 1-4, but you now have the extra choice of landscapes 5-9. Each new landscape has different features, populations and buildings whereas the original Populous kept the same people and buildings, only changing the types of landscapes and features.

The Promised Lands consists of firstly "The Bit



POULOUS - THE ED LANDS



Plains". As you would expect this landscape contains features all about computers. The basic landscape is made up of green lined computer paper with punched sprocket holes. Your Icon is a Mouse, your people are Bugs, buildings are different types of computers and the flags contain Commodore or Atari logos. Landscape features are made up of disks, pencils, mugs of tea and cigarette stubs.

There are around 500 "worlds" in Populous to complete. The Promised Lands uses the same landscape names in the conquest sequence, though they are much tougher to complete now! Some of the tactics you were also used to using may not be the best, therefore different strategies are called for.

The landscape called "The Wild West" has an Icon of a Sheriff's Badge or Indian Totem Pole. Buildings range up from tents to strong wooden forts. Your people are, you guessed it, Cowboys and Indians.

Blockland is a complete world made up from pieces of Lego. The buildings are brick and range up in sizes to proper castles, your people are little Lego men. There are Lego trees and gear wheels for rocks.

My favourite landscape is called "Silly World" which has a chequered landscape that undulates creating a beautiful looking base. Your followers are all little red or green men, they build futuristic looking houses that range from glass pyramids to chromium plated castles.

Lastly there is "Revolution Francaise". Here you have little red or blue soldiers, their two Icons are either the Guillotine or what appears to be Joan of Arc at the stake. These people build up houses with a rather French style of architecture ranging from small maisons to circular turreted French castles.

When it first came out I found Populous be great fun to play. I have since spent many hours making the world a better place to live in! If you also already own the game and find it tremendous fun then you will find The Promised Lands even more fun. It is great value and an essential accompaniment for your omnipresent omnipotence.

B.C.

Graphics: 9 Sound: 9 Playability: 9
ABSOLUTE VALUE: 9 Price: £9.99



THE
WORLD'S
LARGEST
CHAIN
OF
AMIGA
CENTRES

MR DIAMOND'S EXECUTIVE

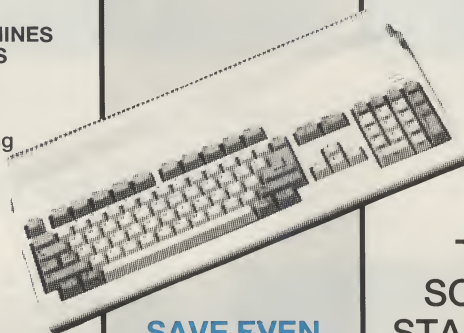
DIAMOND PACK 1

ALL OUR AMIGA A500 PACKS CONTAIN MACHINES WITH THE FOLLOWING STANDARD FEATURES

- 512K RAM
- 1 Meg Disk Drive
- 4096 Colours
- Multi Tasking
- Mouse
- Built-in Speech Synthesis
- Two Operation Manuals
- Operating System Disks
- All Appropriate Connecting Cables

AMIGA 500 + Vixen +
Wizball, ECO, Backlash,
Mouse Mat, Dust Cover,
Return of the Jedi, Star
Wars & The Empire Strikes
Back & Joystick.

£379.00
Including VAT.



SAVE EVEN
MORE WITH
DIAMONDS
MEGA
4

DIAMOND PACK 2

If you thought
Diamond Pack 1 was
good value just look at
our Diamond Pack 2!

AMIGA 500
PHILIPS 8833
MONITOR
THE WORKS
SOFTWARE
STAR LC-10

ONLY **£649.00**
+ VAT

GRAPHICS HARDWARE

DIGIVIEW GOLD

Digitise static colour images in IFF format at all resolutions from 2 to 4096 colours up to 640 x 400 pixels (requires B&W, or colour with B&W mode video camera, to digitise in colour)

ONLY **£119.95** INC VAT

PANASONIC VIDEO CAMERA

High quality, high resolution mono video camera. Ideal for digitising, supplied with lens, mains powered

ONLY **£249.95**

COPY STAND

CAMERA SUPPORT & LIGHT FOR DIGIVIEW

ONLY **£69.95** + VAT

RENDALE

8802 GENLOCK

ONLY **£194.85** INC VAT

MINIGEN

Add computer graphics to your own video easily! Connect to your Amiga's RGB port and domestic video equipment to mix graphics and moving pictures. MOVIE MAGIC AT ONLY...

£113.85 INC VAT

DIAMOND PACK 3

THE AMIGA MEGA 1
MEGA 500,
LIMITED EDITION
1 MEGABYTE AMIGA 500

ONLY **£399.00**
INC VAT

DIAMOND PACK 4

A500, NEW ZEALAND
STORY, BATMAN 2, F18
INTERCEPTOR, DELUXE
PAINT II

ONLY **£379.00**
INC VAT

ACCESSORIES

TAILORED AMIGA
DUST COVERS

ONLY **£4.95**

(Also available for most monitors/printers etc.)

JOYSTICKS

(New low price)

QUICKSHOT 1 4.95
QUICKSHOT 2 TURBO 8.49
EUROMAX MICROHANDLER 22.95
ARCADE 14.89
JOYSTICK PRICES INCLUDE VAT

A501 RAMPACK

Genuine CBM 512K EXTRA RAM with real time clock does NOT invalidate Amiga warranty!

£109.95 inc VAT

CBM 3.5" DS/DD BLANK DISKS

Box of ten blanks **£14.95**
Call for quantity discounts!

BULK PACKED DISKS

Ten 3.5" DS/DD Disks £7.95
80 Capacity Disk Box £4.95

DIAMOND - THE NAME YOU CAN TRUST

EXPORT
HOTLINE
01-597 8851

CHEQUES MADE
PAYABLE TO THE
RELEVANT
BRANCH NAME
ACCESS/VISA
ORDERS
WELCOME

DIAMOND A501:

- ★ TWO YEAR WARRANTY
- ★ BATTERY BACKED CLOCK/CALENDER
- ★ FREE UTILITIES DISK WORTH £49.95

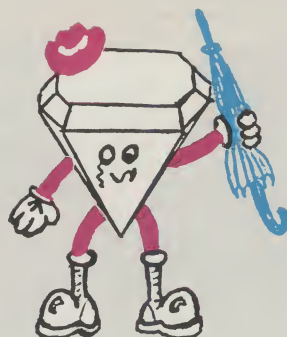
£99.95
INC VAT

★ SPECIAL ★

DIAMOND DRIVE -
NEC MECHANISM,
THRU PORT,
ON/OFF SWITCH.

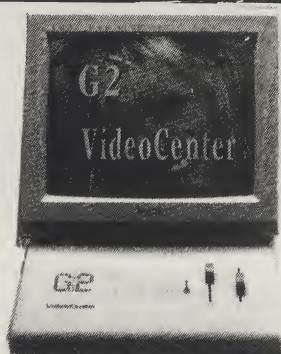
ONLY **£69.00**

S Portfolio



CHIP SHOP PRICES

8up Board RAMS - 9.95 each
A590 RAM Chips - 9.59 each
256K RAM Chips - 2.95 each
(Chip prices exclude VAT)



BROADCAST QUALITY
VIDEO CENTRE
G2 GENLOCK
ONLY **£595**

VORTEX 40 MEGABYTE HARD DISK

New concept in hard disk storage. Buy your hard disk and add optional modules to link a variety of computers. Modules available for AMIGA A500, A1000, Amstrad PCW, IBM PC/PS 2, and shortly for the Amiga A2000. Module contains through port and twin connectors for multiple hard disks.

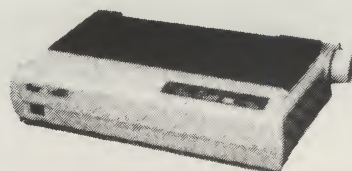
£539

FOR A500 MODULE HARD DISK
Phone for other machine kit prices!

AMIGA A590 HARD DISK,

20Mbs with 2 Megabytes of populated RAM.

ONLY **£499.00** + VAT



PRINTERS

All printers in our range are dot matrix and include the following features...
Standard centronics parallel port for direct connection to Amiga, PC's, ST, Archimedes etc. Tractor and friction paper feeds.

PANASONIC KXP-1124
24-PIN D.MATRIX PRINTER **£249** + VAT

OKIMATE 20
24-PIN COLOUR THERMAL
DOT MATRIX PRINTER **£159** + VAT

STAR LC-10 MONO
Multiple font options from front panel, excellent paper handling C64/128 version available.

£129.00 + VAT

STAR LC-10 COLOUR

Colour version of the popular LC-10, allowing the effect of full colour on screen dumps (requires colour printer driving software). C64/128 version available.

£179.00 + VAT

STAR LC-24-10

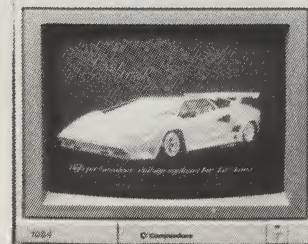
24 Pin version of the popular LC series with exceptional letter print quality.

£199.00 + VAT

STAR XB 24-10

24 PIN COLOUR
PRINTER **£439.00** + VAT

NEWLC-10MKII **£139** + VAT



MONITORS

PHILLIPS 8833
COLOUR MONITOR WITH
STEREO SOUND.

ONLY **£189.00** + VAT

DIAMOND MULTISYNCH
MONITOR

ONLY **£399.00** + VAT

COMMODORE 1081
MONITOR

ONLY **£189.00** + VAT
LEADS P.O.A.

A-DRUM - DRUM SYNTHESISER **£24.95**
PROFESSIONAL PAGEV1.2 **£229.95**

The Ultimate in full colour Amiga DTP packages.

PUBLISHERS CHOICE **£59.00**

The package contains 'Kindworks V2', PagesetterV1.2, Artists Choice and The Headliner.

WE STOCK A VAST RANGE OF SOFTWARE - TOO MUCH TO LIST HERE - AT COMPETITIVE PRICES
FOR A WHOLE RANGE OF COMPUTERS AND GAMES CONSOLES, PHONE US NOW!!!

X-CAD DESIGNER **£69.95**

Perfect start in computer-aided design.

AEGISVIDEO TITLER **£99.95**

Use with Genlocks eg. Minigen etc.

THE WORKS **£59.95**

Integrated w.p., mailmerge, spreadsheet, pro-database, multicolour graphics etc.

WORKBENCH 1.3 **£12.95**

Latest version of Amiga DOS.

24HR ORDER LINE - 0703 232669

SOFTWARE CLUB

FREE GAME!

FREE T-SHIRT!

EXCLUSIVE 30% OFF ALL SOFTWARE

PART EXCHANGE YOUR OLD SOFTWARE TITLES FOR NEW ONES

ALL FOR JUST **£20.00** INC VAT

MIDLANDS (LHC MICROSALLES)

ESTABLISHED 20 YEARS

121 REGENTS ST, LEAMINGTON SPA
WARWICKSHIRE. TEL: 0926 312155

SOUTHAMPTON (DIAMOND COMPUTERS)

114 LODGE RD, SOUTHAMPTON, 5012GS
TEL: 0703 232777

LONDON (LAN COMPUTERS)

1045-1047 HIGH RD, CHADWELL HEATH,
ROMFORD, ESSEX. TEL: 01-597 8851

BRISTOL (DIAMOND COMPUTERS)

227 FILTON AVE, HORFIELD, BRISTOL
TEL: 0272 693545

AMIGA 2000

WHY DIAMOND?

- ★ NEXT DAY DELIVERY SERVICE
- ★ EXPERT TECHNICAL SUPPORT
- ★ SYSTEM CONFIGURATION FACILITY
- ★ FRIENDLY TELESales TEAM WITH GOOD AFTERSALES SERVICE

AMIGA B2000

REV 4.6
KIKSTART 1.3
ENHANCED CHIP SET

£599.00 + VAT

FULL GUARANTEE
IMPORTED MACHINE

**B2000
HOTLINE
0703
232777**

**AMIGA
B2000
SPECIALISTS**

68020
CO-PROCESSOR

£259

FLICKER
FIXER
CARD

£259

8MBYTE
RAM BAORD
2MBS POPULATED

£295



HIGH RES
CBM 1081
MONITOR
£199 + VAT

RAM CHIPS
FOR 8UP
BOARD
**£9.95
EACH**

**49 MEGABYTE
AUTOBOOT, FAST FILE
HARD DISK FOR B2000
ONLY £495.00**

2ND
INTERNAL
DRIVE
£59.00

DIAMOND
MULTISYNCH
MONITOR
£399.00

MR. DIAMOND'S
STAR BUY
2 MBYTE X-CAD
ONLY £49.95

UTILITIES

KINDWORKS
34.95 INC VAT
PUBLISHERS
CHOICE
59.95 INC VAT
DPAINT III
59.95 INC VAT

STARTER KIT

KINDOWRKS
V2.0, FUSION,
CRAZY CARS,
MINI GOLF,
SUPER SKI
£59.95 INC VAT

RETAIL
PROMOTION
ONLY

TOP QUALITY
3½ DS/DD
GUARANTEED
BULK DISKS

10	7.00
25	13.00
50	25.00
100.....	48.00
200.....	94.00

PRICES INCLUDE LABELS

Add £4.95 for 80 cap. Disk Box only when
ordering Disks

DISK PRICES DO NOT INCLUDE VAT

HOME OFFICE KIT 99.95 INC VAT
PAGESETTER 1.2
MAXIPLAN 1.9
INFOFILE, CALE FONTS
+ ARTISTS CHOICE

B2000 CONFIGURED AUDIO/VIDEO PACK

AMIGA B2000
8MB RAMBOARD
49MB HARDISK
(FAST FILE,
AUTOBOOT)
RENDALE 8802
GENLOCK
VIDEO FX 3D
PRO VIDEO +
PHILLIPS 8833
MONITOR

ONLY £1999

XT COMPATIBLE B2000 PACK

AMIGA B2000
32MB PARTITIONABLE
HARD DISK
XT BRIDGEBOARD
MSDOS 3.3
PHILLIPS 8833
MONITOR

ONLY £1195

MUSIC X

& DIAMOND MIDI
INTERFACE
FREE DELIVERY

ONLY £199 INC VAT

PRICES EXCLUSIVE OF VAT

F-16 Combat Pilot

Digital Integration

Since 16-bit microcomputers became commonplace, there has been an upsurge in the availability of "simulation" type software. Nowhere is this more apparent, than in the field of true flight simulators. Far be it from me to decry the efforts of the people behind the 8-bit simulators, but many were held back by limited hardware.

Perhaps the first "true" flight simulator was Microsoft's Flight Simulator on the IBM PC, though sold under the Microsoft label, it was really created by SubLogic. This has now been revamped into Flight Simulator II, converted to the Amiga, and very impressive it looks too. What it lacks is an exact simulation of modern combat; the World War I Ace option is pretty but too tricky for most people. The authors of FS-II have since released Jet - their interpretation of modern combat - but this, in my view, fails to hit the mark.

Next up came Interceptor, written specifically for the Amiga. This is a game Jay Miner is rumoured to play. Where Interceptor scored most highly was its seat-of-the-pants appeal. For the first time, the player got the chance to pilot an F-16 in "real life" situations. Excellent graphics and superb digitised sound added realism; and thus the new wave of flight simulators was born.

As history has shown the F-16 multi-role fighter, has proved an ideal basis for thrilling simulations. Then up came Falcon, which proved realism did not



have to be sacrificed at the expense of good gameplay. Nevertheless, Falcon still features some of the beauty effects - like external views - games players demand.

But now arrives F-16 Combat Pilot - and a new age has dawned. Out: the flashy external views. Out: the options for less realism. And eliminated too, is the convenient autopilot cop out. All these have been replaced by a game which ceases to be a game any longer - it took over 9 man-years to program. You are about to enter the world of the F-16 Combat Pilot where only the fittest will survive and death is a very permanent end.

The strength of the game lies in its close links with reality. Like Falcon for instance, you can select a weapon configuration to suit the needs of a particular mission, or, leave it to the ground crew. Missions

are planned and controlled from the Tactical Air Command (TAC) computer back at base. Even friendly airfields are prone to attack from enemy bombers and interceptors.

Combat Pilot is brimming with many more features than space allows me to describe here, so I will concentrate on the cockpit since you will spend the most time here. The cockpit (or office) is modelled on the interior of a real F-16C - the single seater variant of the aircraft. In front are all the usual instruments you would expect - head-up display, compass, radar, artificial horizon etc. - plus three multi-function



monitors.

It is these monitors that help give the game its appeal, since they are unlike anything yet simulated on a home micro. Each has access to more than ten different displays! These are: three air-to-air radars; two ground-to-air radars; a moving map; weapons status; digital artificial horizon; primary flight data; and finally, infra-red targeting.

Outside the aircraft, the world is portrayed in much the same way as most recent flight simulators - as solids. However, only four views are possible from inside the cockpit; these doubling to reveal other indicators/warning panels. It is worth mentioning though, some aspects of *Combat Pilot's* world are more detailed than in other simulators. A few are even animated like the SAM missile launchers.

Right from the word go, *Combat Pilot* feels like the real thing. The game is supplied on one disk accompanied by a large manual detailing everything you need to know. I should point out though in comparison to say, *Falcon*, DI's presentation of *Combat Pilot* is not all that impressive. That said, much more effort has been put into the game itself. The whole thing is so intricate it defies accurate judgement in a 15 minute demonstration - even the demo supplied is only average when compared to a real session.

The best feature of the game as far as the world is concerned is when you undertake missions at night. Now the cockpit is bathed in an eerie green and red



glow. All outside is dark except where the HUD is illuminated by an infra-red camera. Only now does the real attention to detail become apparent - as you fly past towns, bases etc. you can see the lights in the

"tank squadrons can be defended by heavily armed gunships - and they are all too easy to miss."

buildings! Airfields too, can be identified miles away by their landing strips.

This is where the infra-red display and missile targeting system LANTIRN comes into real use. During the missions you can fly in just under enemy radar, switch on the ground tracking radar and



identify the hot signatures of your chosen targets. Now you can unleash death on the enemy from a safe distance - but watch out for the flak if you get too close. In *Combat Pilot*, tank squadrons can be defended by heavily armed helicopter gunships - and they are all too easy to miss.

If you do manage to make it back to friendly territory then there comes the challenge of getting the aircraft down in one piece. There are three ways of doing this - and none is easy! The first is to radio the tower to check everything is rosy down on the ground. (You cannot land at an airfield which is under attack.)

Next you can request a Talk-Down landing or Ground Controlled Approach. Here the tower gives you instructions on speed, rate of descent and bearing to ensure you land safely. To make life easier you

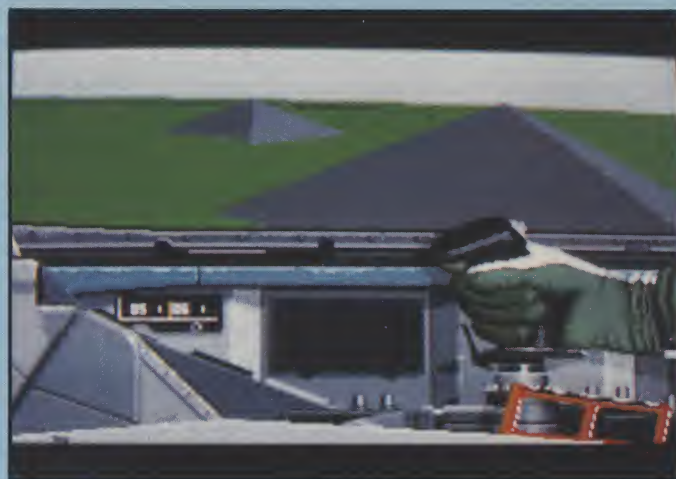


have the option of switching on autoland, provided you are in range of the Instrument Landing System (ILS). Not all airfields have ILS and even then it does not always work! The toughest option is to complete the landing all on your own without any assistance whatsoever - you have my sympathy.

Mission freaks may initially wonder what *Combat Pilot* has to offer. All the mission screen appears to offer is five possible missions - covering all roles of the F-16. However, if you manage to complete all five missions - without dying once - you are rewarded with a chance to enter *Operation Conquest*. This is when it gets hairy!

"DI's Combat Pilot is without any shadow of doubt the most rewarding of the current sweep of air combat simulators and by far the most challenging."

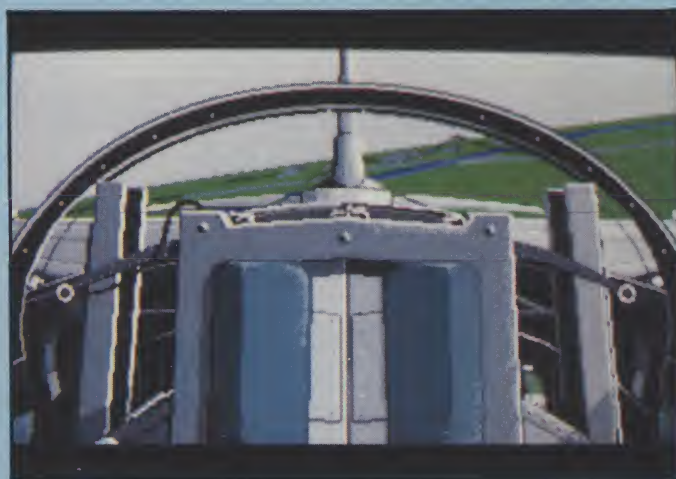
Operation conquest is the final battle. You get the chance to control a whole squadron on your own. You give the orders, you make the decisions and you fly some of the sorties yourself. *Operation Conquest* is a simulation of all out war and it feels very realistic. Perhaps the best part is if you get shot down you do not lose as such - you only lose one aircraft. Even though new aircraft are being built all the time you can still run out and lose.



At the end of *Operation Conquest* - and this takes many hours of flying and a lot of strategy - assuming you win the battle, you will be offered the chance of promotion to another unit. Not only does the new game get even harder - as the enemy strengths increase - it is fought in another area of the map; in a different part of the world so-to-speak.

I have played *Combat Pilot* for more hours than any other game I have ever had - except for *Sentinel*. DI's *Combat Pilot* is without any shadow of doubt the most rewarding of the current sweep of air combat simulators and by far the most challenging. The twin joystick option adds to the feel and it even includes a two player serial port option.

If I have to criticise it, I must mention the sound which is poor by Amiga standards; the graphics too are largely an ST port. Also, the manual based protection system goes a little too far - it asks for a



code every time you take off! Nevertheless, this was a game well worth the wait, and thoroughly deserving £25 of anybody's money. Buy it, play it, enjoy it - but remember too: "This time it's for real."

M.S.

Next month, we will publish the first concise player's guide to *F-16 Combat Pilot*.

Graphics: 9 Sound: 7 Playability: 10
ABSOLUTE VALUE: 10 Price: £24.95



**Authorised
AMIGA
B2000
CENTRE**

**AMSTRAD
ADVANCED
SYSTEMS
CENTRE**

SPECIALISTS IN MAIL ORDER WHY MEGALAND

24 HOUR DELIVERY • 12 MONTHS WARRANTY ON ALL HARDWARE
ON SITE MAINTENANCE OPTIONAL • TECHNICAL SUPPORT
HELPFUL FRIENDLY SERVICE • SPECIAL PRICE OFFERS
MEGASOFT CLUB MEMBERSHIP FOR EXTRA SPECIAL OFFERS
EXPORT SPECIALISTS (ASK FOR DETAILS 0703 332225)

MEGALAND BRANCHES AT SOUTHAMPTON AND OXFORD

**SEE US O
STAND 5
AT THE
COMPUTE
SHOPPER
SHOW**

STAR PRINTERS

	Price Ex. VAT	Price Inc. VAT
LC10 MONO 9 PIN 144CPS NLQ 36CPS 8NLO fonts, 4K buffer	134.78	155.00
LC10 COLOUR 7 colours same spec as LC10 MONO will accept black ribbons	169.52	194.95
LC24-10 24 PIN 170CPS NLQ 57CPS 7K buffer 8 fonts	255.65	294.00
NX-15 9 PIN wide carriage 120CPS NLQ30CPS 4K buffer	280.00	322.00
LC10 MONO for C64 & 128 only	149.56	172.00
LC10 Colour for C64 and 128 only	186.95	215.00
NB24-10 24 PIN 80 column 216CPS/72CPS LQ	429.52	493.95
NB24-15 24 PIN wide 136 column 216CPS/72CPS LQ	519.13	597.00
NB 15 24 PIN 136 column 300CPS/100CPS LQ	686.08	789.00
NX 15 9 PIN 136 column 120CPS/30NLQ	280.00	322.00
ND 10 9 PIN 80 column 180CPS/45CPS NLQ	293.91	338.00
ND 15 9 PIN 136 column 180CPS/45CPS NLQ	340.86	391.99
NR 10 9 PIN 80 column 240CPS/60CPS NLQ	344.34	396.00
NR 15 9 PIN as NR10, but 136 column	393.91	453.00

STAR PRINTERS THE PROFESSIONAL SERIES

TWELVE MONTHS ON-SITE WARRANTY ON THE ENTIRE PROFESSIONAL SERIES (UK MAINLAND ONLY FREE)		
FR-10 9 PIN 300CPS/76CPS NLQ slew rate 3.05 (ins per sec.) standard buffer 31K max but 159k opt 16 MLQ/LQ resident fonts	287.23	330.31
FR-15 9 PIN this is the 15" version of the FR-10, ideally suited for the widest of printing of both A4 and A3 paper in its landscape orientation.	389.83	448.31
XB24-10 24 PIN 240CPS/80DEL slew rate-paper feed (ins per sec.) 3.6 standard buffer 27K max but 187K super letter quality fonts 4 NLQ/LQ fonts 25 three of which are ORC fonts including code 39 bar code	389.83	448.31
XB24-15 24 PIN the XB24-15 is the wider version of the XB24-10 offering all the above facilities, but on a printer with a 15" carriage. The XB24-10 and 15 both print at 240 CPS in draft mode plus they both can coast through letter quality printing at 76CPS	513.49	590.51
All printers in this range have the option of a low cost 7 colour upgrade module which can be fitted by virtually anyone.		

STAR LASER SERIES

LASER PRINTER 8 8 resident fonts (option extra 7 fonts) 8 pages per minute, 300 dots per inch 1 megabyte expandable to 2 meg canon engin compatibility HP, IBM, EPSON, DIABLO warm up time		
--	--	--

Continued

	Price Ex. VAT	Price Inc. VAT
60sec. fonts on page 64 toner cartridge 4000 pages plus one year free on site warranty UK only	1294.46	1488.63
LASER PRINTER 8 IIT same as printer 8 but with option of 4 megabytes and an input standard 2 x 200 both have the capacity for printing portrait and landscape on the same page	Phone	Phone

CAMERON HANDY SCANNERS

Handy Mouse RS 232 for all IBM PCS including adapter 9/25PIN plus driver	37.39	42.99
Handy Scanner Type 2 scans in black & white width of scan 64mm • 512 points per line • speeds 3ms per line including handy painter + reader o.c.r. versions available for IBM PC/AT/XT. AMIGA ATARI ST	149.43 149.43 N/A	171.85 171.85 N/A
Handy Scanner type 4 • scans up to 16 tones of grey • width of scan 64mm speed 3ms per line • sold with handy painter for graphics • sold with handy reader for character recognition also contains its own word processing programme IBM PC/AT/XT AMIGA ATARI ST	236.43 225.20 N/A	271.89 258.99 N/A

CAMERON Personal A4 Scanner • format A4, 210mm x 297mm Flat Bed operation • scan precision horizontal 8 points/mm vertical 7.7 points/mm speed 10 seconds for A4 page black/white dither mode interface card and connecting cable included requires IBM-DOS 2.0min. AMIGA - 1Mb + AMIGA DOS ATARI 1Mb with painter/reader IBM PC/AT/XT COMP AMIGA ATARI ST	443.05 454.28 N/A	509.51 522.42 N/A
---	-------------------------	-------------------------

FAX CARDS FOR PCS

C-FAX SR enables you to send and receive faxes on any group 3 fax BAPT approved	150.88	173.52
C-FAX SRI gives your PC all the features of a top of the range fax machine send and receive both text and graphics incoming faxes are automatically stored to disk plus much more	180.40	207.46
C-FAX plus top of the range fax a unique second port allows a fax to be used both as a background printer and scanner	Phone	Phone
CIFER ATS PC FAX CARD	200.00	230.00

FILE CARDS

Western Digital File Card	205.00	235.75
W/D 20Mb File Card 32Mb	156.53	180.00
60 Mb Hard Card	390.44	448.99
MINISCRIBE 3650 40Mb H/Disk	207.83	239.00

SAMSUNG PCS

	Price Ex. VAT	Price Inc. VAT
3000 DD XT	510.00	586.50
SPC3000/3 20Mb XT	698.19	802.92
SPC3000V/2 Dual Drive XT	477.16	548.75
SPC6000 20Mb HD	1100.00	1265.00
SPC6000 SD	885.00	1017.75
SPC 6500/3 and EGA Card	1139.00	1309.85

ALL SAMSUNG PCS COME FREE
WITH ONE YEARS ON SITE
WARRANTY

COMMODORE DESK TOP PCS

ALL COMMODORE COMPUTERS FROM THE PC10 111 TO PC60 SYSTEMS COME WITH 12 MONTHS FREE ON SITE WARRANTY (UK MAINLAND ONLY)		
PCI SD MM CPU 8088 SPEED 4.77 MHZ 512Kb RAM expan to 640Kb MS-DOS 5 drive ROM 16Kb serial-RS232C Parallel centronic small foot print	268.69	309.00
PC10 111 SD MM CPU 8088 8/16 bit speed 4.77, 7.16, 9.54 (switchable) RAM 640 expandable 3 expansion slots AT style keyboard enhanced MS- DOS 5 drive	481.73	554.00
PC10 111 SD CM CGA spec as above	613.04	705.00
PC10 111 SD CM EGA spec as above	737.39	848.00
PC10 111 DD MM dual drive mono monitor + framework and mouse	707.95	813.00
PC10 111 DD CM CGA framework and mouse	869.56	1000.00
PC10 111 DD CM EGA framework and mouse	999.13	1149.00
PC10 111 DD MM MPS1230 printer 9 PIN AT style keyboard framework and mouse	793.91	913.00
PC10 111 40Mb HD framework mouse		
MONO	873.91	1005.00
CGA	1000.00	1150.00
EGA	1125.13	1293.90
PC20 111 SD MM 20MB Hard Disk mono monitor	683.47	756.00
PC20 111 SD HD CGA 20MB Hard Disk colour graphics adapter	813.04	935.00
PC20 111 SD HD EGA 20 MB Hard Disk enhanced graphic adapter	940.86	1082.00
PC30 111 MS window + mouse 20MB HD 12 MHZ		
MONO	Phone	Phone
COLOUR	1127.82	1296.99
EGD	1200.00	1380.00
PC40 111 40HD VGA CPU 80286 speeds 6, 8 or 12MHZ RAM 1Mb 640K base extend 384K graphics standard VGA, EGA, CGA, MOA, switchable OS MS-DOS 3.3	1353.04	1555.99
MONO	1866.08	2146.00
COLOUR		
PC40 111 40HD VGA + tapestreamer	1653.91	1902.00
MONO	1866.08	2146.00
COLOUR	Phone	Phone
PC50 HD 386SX	Phone	Phone
PC60 TOWER 386	Phone	Phone

AMSTRAD PC 2086

	Price Ex. VAT	Price Inc. VAT
PC2086 SD12 MD	538.26	
PC2086 SD 14 CD	673.91	
PC2086 12 HRCD	760.86	
PC 2086 SD 14 HRCD	847.82	
PC 2086 DD 12 MD	673.91	
PC 2086 DD 14 CD	804.34	
PC 2086 DD 12 HRCD	891.30	
PC 2086 14 HRCD	978.26	
PC 2086 HD 12 MD	891.30	
PC 2086 HD 14 CD	1021.73	
PC 2086 12 HRCD	1117.39	
PC 2086 14 HRCD	1213.04	

AMSTRAD PCW

	Price Ex. VAT	Price Inc. VAT
PCW 8256	338.26	
PCW 8512	404.34	
PCW 9512	447.82	

AMSTRAD PPC PORTABLES

	Price Ex. VAT	Price Inc. VAT
PPC 512S	360.86	
PPC 640S	447.82	
PPC 512D	491.30	
PPC 640D	626.08	

AMSTRAD PC1512

	Price Ex. VAT	Price Inc. VAT
PC1512 SD M/M	360.86	
PC1512 DD M/M	447.82	
PC1512 SD C/M	447.82	
PC1512 DD C/M	534.78	

AMSTRAD PC1640

	Price Ex. VAT	Price Inc. VAT
PC1640 SD ECD	626.08	
PC 1640 DD ECD	717.39	
PC 1640 HD20 ECD	891.30	
PC 1640 SD C/D	538.26	
PC 1640 DD C/D	626.08	
PC 1640 HD20 C/D	804.34	
PC 1640 SD M/D	447.82	
PC 1640 DD M/D	538.26	
PC 1640 HD20 M/D	717.39	

AMIGA B2000 HARDWARE

	Price Ex. VAT	Price Inc. VAT
AMIGA B2000 1.3 base unit	865.63	
AMIGA B2000 colour monitor	1071.50	
AMIGA B2000 PHILIPS 8833 monitor bridgeboard 20Mb PC/ AMIGA Hard Disk	1282.60	
As above but with 1084S monitor	1286.95	
MEGALAND B2000 PACK B2000 8833 MONITOR or 1084S MONITOR XT bridgeboard 20Mb PC Hard Disk Star LC 24-10 printer	1533.95	

MEGALAND SOUTHAMPTON
42 - 44 Millbrook Road East
Southampton, Hants., SO1 0HY
TELEPHONE 0703 332225
FOR MAIL ORDER

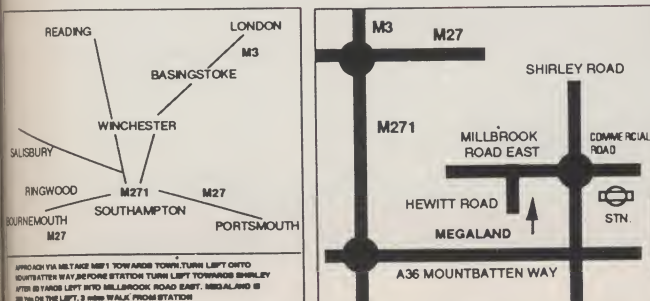
MEGALAND OXFORD
Islip Road, Off Hernes Road
Oxford. TEL 0865 512599
OR 0865 512633

OPEN MONDAY TO SATURDAY 9.00am to 5.30pm

OFFICIAL ORDERS
Welcomed from PLC's,
Government and Educational
Establishments.

ACCOUNTS TERMS
30 Days from date of invoice
Phone for further information

PRICES CORRECT ON DATE GOING TO PRESS



XENON

2

MEGABLAST



Image Works

If you are going to release a vertically scrolling shoot 'em up today, it has got to be something special. Just another unoriginal zapper in the Xenon mould would have little chance of success. What Amiga gamers want is an arcade machine in their own home. Bar the coin slot, Xenon II gives you exactly that.

"Crispin, the alien shopkeeper, is prepared to buy or sell weapons, as long as he makes a profit."

The plot concerns the Xenites, the race you defeated in Xenon. One thousand years later, they have planted a series of time bombs throughout history. Time itself will be thrown into chaos unless something is done, and of course you are just the man for the job. Your mission is to pilot your ship through each time zone, from the beginnings of evolution to the android future. Radiation from the bombs has mutated the poor creatures of these worlds into savage killers, so your only option is to shoot the lot of them.



It all starts off quite tamely. A few waves of conventional aliens swirl about, whilst a couple of speed-up tokens drift across the screen. As the genre dictates, shooting an entire attack wave releases a cash token. Half way along the current level, and again at the end, you pay a visit to the



shop. Crispin, the alien shopkeeper, is prepared to buy or sell weapons, as long as he makes a profit. If you have picked up an expensive add-on along the way, but would really like to pool your resources for a deluxe alien-liquidizer, selling-up can be a good idea. In addition to these, other weapons found floating around the levels can be rounded up for free.

Predictably, the aliens step up their tactics soon enough. The bigger enemies can take a number of shots before exploding, but yield bigger cash tokens. Worms made from loads of tiny segments squirm around some of the game's slimier corners, before returning to their refuge via tailor-made pipes. The giant crustacean lying at the level's end is superbly drawn and coloured. As you move up to take a closer look, it whips out a tentacle, wiping out the unwary player. Fry its eyeball and the screen is filled with

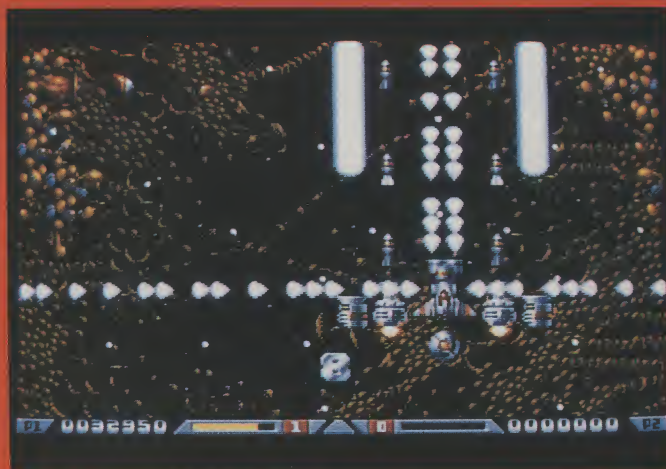
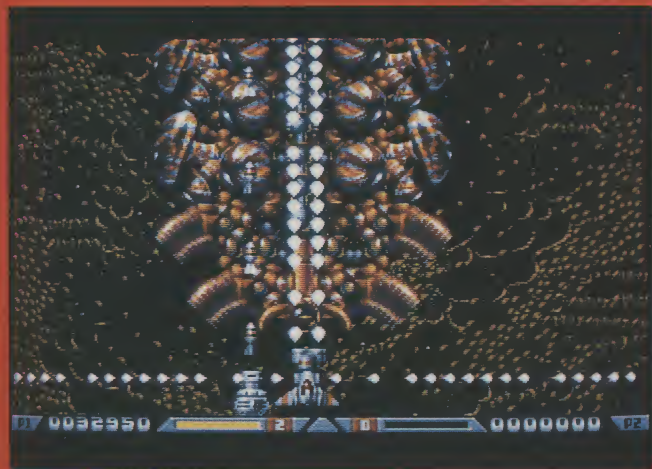
delicious little cash tokens.

Compared to what follows, level one is nothing. Further levels harbour some fiendish traps. The reptilian heads on the side walls can go unnoticed in the frantic zapping, until they suddenly shoot out on their extended necks, chomping insanely at the air. Other gruesome surprises include the exploding pods, which send shoals of crazed fish floundering around the screen. For a lot of the game, the parallax scrolling is purely for show, but it does come into play if you buy a "dive" token. This allows you to dive down into the screen for a short time, away from the perils above.

When someone sets out to produce a sequel, it is standard practice to note everything the consumer disliked about the original, and scrap or improve the offending points. However, as there was barely a



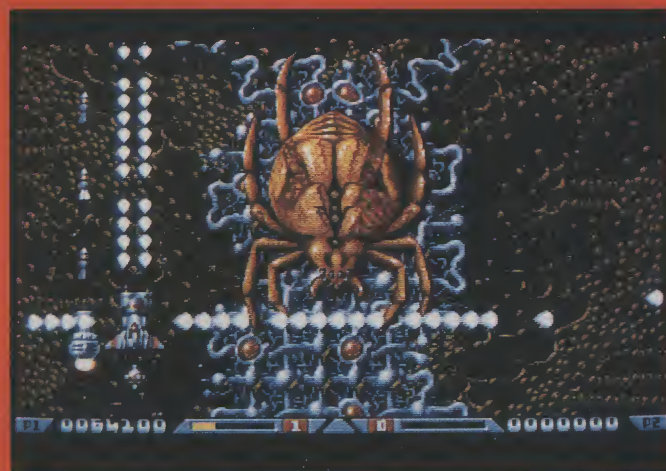
Enormous graphics, displayed on similarly gargantuan monitors have been the hallmark of this years coin-ops. That's fine if you have thousands of pounds to spend on hardware. Mimicking that on the comparatively paltry Amiga can pose a few problems. Technical standards have come on a lot since Xenon, which conceded the right third of the screen to a static status panel. Software sprites were used for greater flexibility in numbers and colours. Once again with Xenon II, software sprite routines have been used, allowing immense fleets of aliens to attack simultaneously. On top of that, the bulky score panel has gone, leaving a full NTSC screen for the game itself.



bad word said about Xenon, the Bitmap's must have wondered where to start. Instead they seem to have kept an ear to the ground regarding the whole shoot 'em up scene, and have included shades of just about every popular blaster. One of its best points is that

"the balance is almost perfect; loads of aliens countered by loads of super-destructive firepower."

you get to keep your weapons after dying. The omission of that seemingly insignificant feature would have made the game just too difficult. As it is, the balance is almost perfect; loads of aliens countered by loads of super-destructive firepower.



Then there is the music. The Bomb The Bass piece playing over the title screen is brilliant. It continues through to the game, although it does lose out on a track or two as you play. Alternatively you could just switch to sound effects during the game.

Xenon II is an amazing game. Graphics sound and gameplay are all superb. It is hard, but not too hard, and it is damned good fun! It won't have the staying power of a classic sports sim, but if it's a shoot 'em up you want, you can't go wrong with Xenon II.

T.H.

**Graphics: 9 Sound: 8 Playability: 9
ABSOLUTE VALUE: 9 Price: £19.95**

U.K. GAMES CHART

Game	Company	Last Month	Price
1. Xenon II	Mirrorsoft	(-)	£24.95
2. New Zealand Story	Ocean	(1)	£24.99
3. Populous New Worlds	Electronic Arts	(-)	£9.95
4. Powerdrome	Electronic Arts	(2)	£24.95
5. F16 Combat Pilot	Digital Integration	(-)	£24.95
6. Forgotten Worlds	US Gold	(4)	£19.99
7. Grand Prix	Accolade	(-)	£24.95
8. Rick Dangerous	Rainbird	(5)	£24.95
9. Sleeping Gods Lie	Empire	(8)	£24.95
10. Kick Off	Anco	(10)	£19.99

MAIL
ORDER

ADVANCE ELECTRONICS (N.E.) LTD.

MAIL
ORDER

All prices include VAT/delivery

ACCESSORIES

A1010 Ext. 3 1/2" drive	£ 99.99
NEC 3 1/2" ext drive - slimline	£ 89.00
CUMANA CAX-354 3 1/2" ext	£ 94.99
A500 Power supply	£ 62.49
C64 Power supply	£ 24.90
A500 Mouse	£ 34.99
A520 Modulator	£ 24.99
A501 Ram/clock	£ 129.00
4 Meg Expansion	£ 79.95
1/2 Meg + Clock & Switch	£ 98.95
A590 Hard Disk	£ 395.00
1.3 Kickstart ROM	£ 24.99
Pro-Sound Designer Gold	£ 79.95
Midi Master	£ 34.99
Digiview Gold 3.0	£ 139.95
Minigen	£ 113.49
Marconi Trackball	£ 59.95
Toshiba TF-111 Fax	£ 899.00
Funai PFX5800 Fax/M/C	£ 649.00
Twin extension lead	£ 5.95
BBC Emulator	£ 49.95
2-way aerial switch	£ 2.95
Mouse mat - plain	£ 5.95
Mouse mat - Amiga 500	£ 7.95
Dust cover - A500	£ 5.95

DISK BOXES

40 - lockable 3 1/2"	£ 5.99
80 - lockable 3 1/2"	£ 11.95
100 - lockable 3 1/2"	£ 12.95
50 - lockable 5 1/4"	£ 7.90
100 - lockable 5 1/4"	£ 10.90
Head cleaner 3 1/2"	£ 5.95
Head cleaner 5 1/4"	£ 5.95

ACCESSORIES

Printer paper 11" x 9 1/2" x 2000	
Sheets 60 gsm	£ 19.95
Printer cable A500	
Centronics 1.6 metre	£ 8.95

DATA SWITCH BOXES

36 Centronics 2-way (2/1)	£ 42.55
36 Centronics 3-way (3/1)	£ 52.90
36 Centronics 4-way (4/1)	£ 62.10
36 Centronics X-over (2/2)	£ 49.90
25 serial/par. 2-way (2/1)	£ 42.55
25 serial/par. 3-way (3/1)	£ 52.90
25 serial/par. 4-way (4/1)	£ 62.10
25 serial/par. X-over (2/2)	£ 49.90
Demon II V21/V23 modem	£ 91.94
Linnet V21/V23 auto modem	£ 174.80
Linnet 1200 V21/V23 modem	£ 274.85
Series four 2123s modem	£ 316.25
Series four 1200s modem	£ 458.85
Series four 2400s modem	£ 573.85
Future sound 500	£ 84.95
The "control centre"	£ 47.45
Cameron Handyscan 4	£ 299.00
B & W Handy scan 2	£ 209.95
Philips TV tuner AV7300	£ 74.95
Philips 8833 Monitor	£ 239.00
A500 Scart lead	£ 12.99
A4 Graphics Tablet	£ 299.00
A500 + A501 + Dragon Lair	£ 499.00
A500 + 1084s	£ 608.95
1084s hi-res colour	£ 279.95
20 Meg Supra hard disk	£ 565.00
30 Meg Supra hard disk	£ 699.00
60 Meg Supra hard disk	£ 1198.00

HARDWARE PACK

Amiga 500, mouse, modulator, power supply, manuals, 1.3 workbench, tutorial, Amiga basic, all cables/leads + plug.

£369.00

BONUS PACK 1

The hardware pack + Barbarian, Art of Chess, Buggy Boy, Ikari Warriors, Insanity Flight, Amegas, Wizball, Mercenary, Terrapods, Thundercats, mouse mat.

£399.00

BONUS PACK 2

The hardware pack + 32 top games titles, Fanta joystick, mouse mat.

£399.00

PRINTERS

Citizen 1200 Centronics or serial	£139.00
Citizen 180E Centronics or serial	£159.00
Citizen MSP15E	£235.00
Citizen HGP40	£378.00
Citizen HGP45	£399.00
Citizen MSP50 (colour)	£332.00
Citizen MSP55 (colour)	£353.00
Commodore MPS-1230P	£229.00
Commodore MPS-1500C	£199.00
Star LC10 mono	£179.00
Star LC10 colour	£229.00
Star LC-15	£ 319.00

PRINTERS

Star LC24-15	£ 419.00
Star FR-10	£ 399.00
Star SF100J/DK sheet feed	£ 64.90
Star NX-15	£329.00
Epson LX-800	£244.00
Epson FX-850	£469.00
Epson LQ-500	£319.00
Epson EPX-200 sheet feed	£ 74.95
Panasonic KXP-1081	£169.00
Star XB-24-10	£ 495.00
Star XB-24-15	£ 649.00
Citizen Swift 24	£337.00

MONITOR PACK

Commodore 1084s 14" hi-res colour monitor + A500 lead. When purchased with the hardware pack or a bonus pack.

£239.95

DISKS

Maxell bulk 3 1/2" DSDD	
135 TPI + Labels. 100% tested.	
10	£ 9.50
25	£ 23.00
50	£ 45.00
100	£ 87.00
200	£158.00

PERIPHERAL PACKS

Linnet V21/V23 Modem + K-comm 2	£ 199.95
Ext 3 1/2" drive + 50 Sony disks + 80 disk box	£ 135.99
100 Sony disks + 80 box + Headcleaner	£ 99.99
Star LC-10 Colour + K.Text 2	£ 279.99
Star LC-24-10 + K.Text 2	£ 309.99

All goods normally despatched within 48 hrs.

All prices correct at time of going to press.

HOW TO ORDER

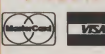
BY POST



Cheques & PO's made payable to "Advance Electronics (NE) Ltd."

PHONE

091
5108040



FAX

091
5109446



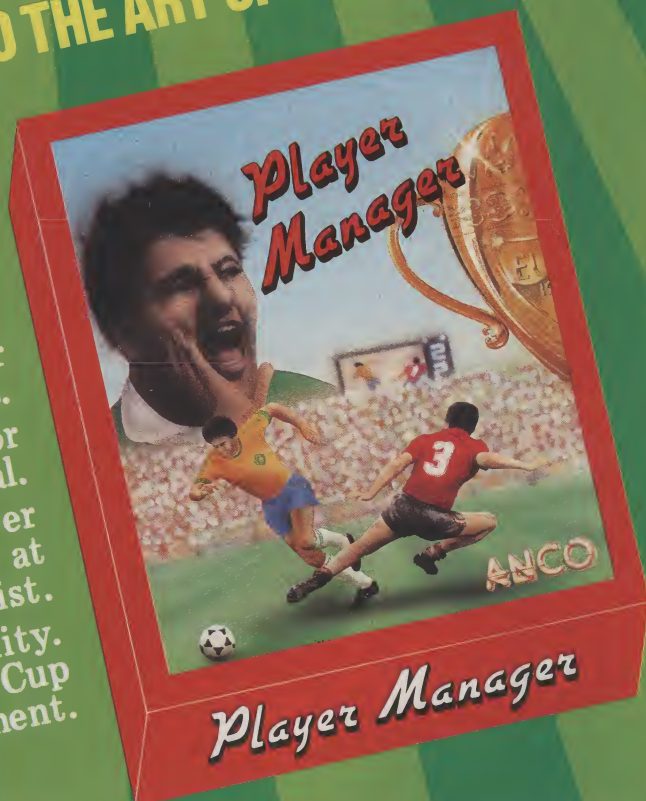
All items free delivery in UK

ADVANCE ELECTRONICS (NE) LTD.
MARI HOUSE, DEPTFORD TERRACE,
SUNDERLAND, ENGLAND SR4 6DD.

Player Manager

BRINGS THE QUALITY OF 'KICK OFF' TO THE ART OF MANAGEMENT

- * Play the BEST soccer simulation. Blistering Pace - Pixel Perfect Passing.
- * Unique facility to design your own TACTICS.
- * Train your squad and watch them put the new tactics in action.
- * Over 1000 players in the league. Each player with a unique combination of attributes.
- * A lively transfer market. Haggle or barter for the best deal.
- * Facility to focus camera on any player on the field. Have a hard look at a player on the transfer list.
- * Load and Save game facility. League and Cup tournament.



Bring Back The Glory Days. That's the brief of the newly appointed **PLAYER MANAGER**, an international class player, as he takes charge of a third division club. His success depends on four distinct aspects of the game.

PLAYING SKILLS OF THE MANAGER

This part of the game is a refined version of the KICK OFF, retaining it's pace, flavour and the universally acclaimed game play. Play in your position or control the nearest player. The first option combined with a tailor made tactics can play havoc in the opposition goal mouth.

MANAGERIAL SKILLS

Devising winning tactics, acquiring players with right skills from the Transfer market and selecting a team with the right balance is the test of the Managerial skills. He must aim to get promotion as quickly as possible while he can still influence the results as a player and before the age starts to effect his pace and stamina. When to hang his boots up is the toughest decision he has to make.

TACTICS

Four well proven tactics are provided to suit most situations but you can design your own tactics. The pitch is divided in blocks. Place the ball in a block and move the players to the required position. Repeat the process for each block. See the tactics in action using the Ray Trace facility.

THE PLAYERS

Over a thousand players in the four division league. Each player with a unique combination of the following attributes: SHOOTING ACCURACY, PASSING ACCURACY, PACE, STAMINA, APPLICATION, AGGRESSION, HEIGHT and TACKLING SKILL. These attributes are influenced by the player's Age, Mental and Physical Dexterity, Quality of Experience, Weight, Temperament and Morale. There are several other factors such as injury, disciplinary points, unsuitable playing position which influence a player's performance.

Hosts of other factors like referees, injuries, disciplinary problems, team morale etc. can lay to waste the best laid plans of a manager. The **PLAYER MANAGER** brings everyday realities of a Manager's life, his talents as a manager and a player into a sharp FOCUS. THE FOCUS IS ON YOU.

AMIGA - ATARI ST £19.95

CBM 64 - SPECTRUM - AMSTRAD £9.95 (Cassette) £14.95 (Disc) *SOON*

ANCO

ANCO SOFTWARE LTD., UNIT 10, BURNHAM TRADING ESTATE, LAWSON ROAD, DARTFORD, KENT.
Telephone No.: 0322 92513/92518.

Mail Order by Cheque, Postal Order, ACCESS or VISA.

FAX No.: 0322 93422.

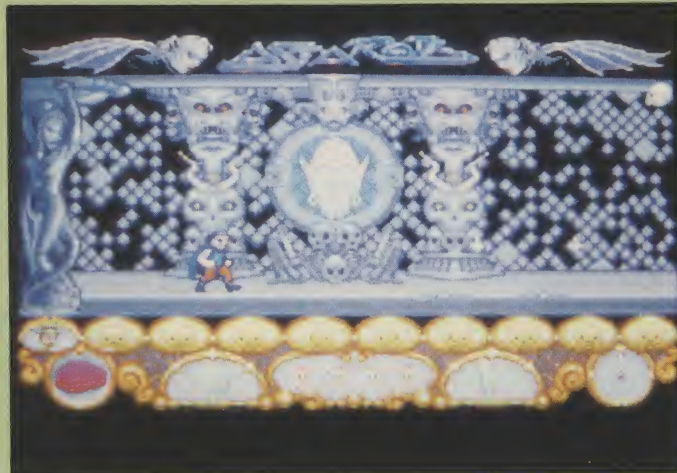
ASTAROTH

Hewson

Astaroth is an unusual being. Napalm cannot harm her, bullets will not hurt her, swords and knives slip as if by magic off her skin. The only weapon that has any kind of effect against this Angel of Death is the power of the mind. With the security of his world threatened, Ozymandias has no choice but to channel all his mental energies into Astaroth's destruction.

The journey takes him through deep, labyrinthine passages pitted with dangers and infested with Astaroth's minions. Impaling stalactites, energy-draining skulls, bats, scorpions and worms fall from the cavern ceilings. Beholders, harpies, tortured souls and fire elementals attack him from all sides.

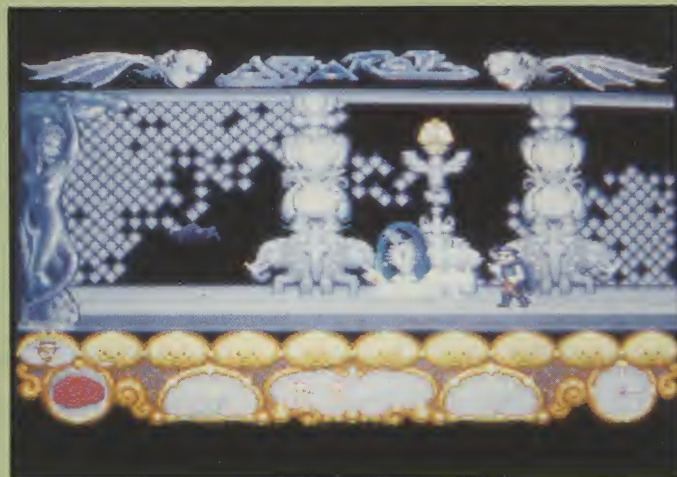
Initially, Ozymandias' mind is pretty weak; he cannot do much more than dodge his enemies. His



mental agility can only improve if he collects the ten extra mindpowers which are hidden in large bell jars in remote parts of the subterranean complex. These include such abilities as pyrokinesis, telekinesis, shapeshifting and cryogenetics. In practice, these enable you (among other things) to move around more freely, see in the dark, change into a bird (useful if flying is the only way to get past an obstacle) and fire at or freeze enemies. You can switch between mindpowers you have already collected at any time although some only prove useful in specific situations.

The three guardians of the soul have to be defeated before you can get your hands on Astaroth. They are the Sphinx, a three headed hydra and the Marilith Demon. Unless you are in possession of the right mindpowers you will not be able to overpower them.

Make it to Astaroth's inner lair and the final showdown is depicted as a battle of the minds. Basically, it is a case of waggling the joystick as fast as you can until your mind scores a mental defeat



over Astaroth's.

There's no denying that basing a game around mindpowers is an unusual idea. Unfortunately, the gameplay does not quite match up to the originality of that idea. Despite its references to mind games and telepathy, all Astaroth really amounts to is an average arcade adventure. The attractive graphics and psychedelic soundtrack are very impressive but there just is not enough variety to the gameplay to keep you hooked. One screen looks much like another and simply searching for the ten mindpowers does not give you enough incentive to go on. Unless you are absolutely addicted to arcade adventures, Astaroth probably will not provide enough substance to satisfy.

K.H.



Graphics: 7 Sound: 6 Playability: 8
ABSOLUTE VALUE: 8 Price: £24.95

FREE! TENSTAR PACK WORTH OVER £229!



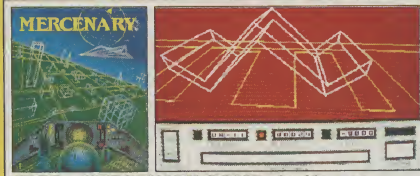
FREE! - AMEGAS - by Players



FREE! - INSANITY FIGHT - by Microdeal



FREE! - ART OF CHESS - by SPA



FREE! - MERCENARY COMP - by Novagen



FREE! - BARBARIAN, ULT WARRIOR - by Palace



FREE! - TERRORPODS - by Psygnosis



FREE! - BUGGY BOY - by Elite



FREE! - THUNDERCATS - by Elite



FREE! - IKARI WARRIORS - by Elite



FREE! - WIZBALL - by Ocean

Commodore AMIGA



ONLY
£3.34
PER WEEK
RETURN COUPON
FOR DETAILS

£346.95

+VAT =
£399

INCLUDES
FREE UK
DELIVERY

The Amiga 500 is one of a new breed of technologically advanced computers, which are now emerging as the new standard for home computing, based around the new Motorola 68000 chip. The A500 has 512K RAM and a 1Mbyte double sided disk drive built-in. It can be connected directly to a wide range of monitors, or to a domestic TV set through a TV modulator. Designed with the user in mind, the A500 features a user friendly WIMP environment and comes supplied with a free mouse. And, when you buy your Amiga from Silica Shop, the UK's No1 Amiga specialists, you will experience an after sales service that is second to none, including a technical support helpline and free newsletters and price lists. Return the coupon below for our current information pack, which will give details of the Silica service and the very latest Silica Amiga offers. E&OE.

WHY SILICA SHOP?

Before you decide when to buy your new Commodore Amiga computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer as well as expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Amiga related products in the UK, a full time Amiga specialist technical helpline and in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. Here are just some of the things we can offer you:

THE FULL STOCK RANGE: The largest range of Amiga related peripherals, accessories, books and software in the UK.

AFTER SALES SUPPORT: The staff at Silica Shop are dedicated to help you to get the best from your Amiga.

FREE NEWSLETTERS: Mailed direct to your home as soon as we print them, featuring offers and latest releases.

FREE OVERNIGHT DELIVERY: On all hardware orders shipped to Silica Shop customers within the UK mainland.

PRICE MATCH PROMISE: We will normally match our competitors offers on a 'same product same price' basis.

FREE TECHNICAL HELPLINE: Full time team of Amiga technical experts to help you with your technical queries.

But don't just take our word for it. Complete and return the coupon below for our latest Amiga literature and begin to experience the Silica Shop specialist Amiga service.

PHOTON PAINT PACK

A500 Computer	£399.99
TV Modulator	£24.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£724.43
LESS DISCOUNT:	£325.43
PACK PRICE INC VAT:	£399

1084S MONITOR PACK

A500 Computer	£399.99
1084S Colour Monitor	£299.99
Photon Paint	£69.95
TenStar Pack	£229.50
TOTAL RRP:	£999.43
LESS DISCOUNT:	£350.43
PACK PRICE INC VAT:	£649

FREE FROM SILICA

When you buy the Amiga 500 from Silica Shop, you will not only get a high power, value for money computer, we will also give you some spectacular free gifts. First of all, we are now including a TV modulator with every A500 stand alone keyboard, so you can plug your Amiga straight into your TV at home (the modulator is not included with the A500+A1084S pack as it is not required for use with monitors). Secondly, we have added a free copy of Photon Paint, an advanced graphics package with an RRP of £69.95. Last (and by no means least), so that you can be up and running straight away, we are giving away the sensational TENSTAR GAMES PACK with every A500 purchased at Silica Shop. This pack features ten top Amiga titles which have a combined RRP of nearly £230! Return the coupon for details.

FREE TENSTAR PACK

When you buy your Amiga 500 from Silica Shop, we want to make sure you get the best deal possible. That is why we are giving away the TENSTAR GAMES PACK worth nearly £230, absolutely FREE with every A500 purchased from us. The TenStar Games Pack includes ten titles for the A500, each individually packaged in its own casing with instructions.	
Amegas	£14.95
Art Of Chess	£24.95
Barbarian, Ult Warrior	£19.95
Buggy Boy	£24.95
Ikari Warriors	£24.95
Insanity Fight	£24.95
Mercenary Comp	£19.95
Terrorpods	£24.95
Thundercats	£24.95
Wizball	£24.95
TOTAL RRP:	£229.50
INC VAT	

DO YOU OWN AN AMIGA?

If you already own an Amiga computer and would like to be registered on our mailing list as an Amiga user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Sidcup branch and begin experiencing a specialist Amiga service that is second to none.

SILICA SHOP:

SIDCUP (& Mail Order)	01-309 1111
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX	
OPEN: MON-SAT 9am - 5.30pm	LATE NIGHT: FRIDAY 9am - 7pm
LONDON	01-580 4000
52 Tottenham Court Road, London, W1P 0BA	
OPEN: MON-SAT 9.30am - 6.00pm	LATE NIGHT: NONE
LONDON	01-629 1234 ext 3914
Sellfridges (1st floor), Oxford Street, London, W1A 1AB	
OPEN: MON-SAT 9am - 6.00pm	LATE NIGHT: THURSDAY 9am - 8pm

To: Silica Shop Ltd., Dept AUI 11.89, 1-4 The Mews, Hatherley Road, Sidcup, Kent DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE AMIGA

Mr/Mrs/Ms: Initials: Surname:

Address:

Postcode:

Do you already own a computer
If so, which one do you own?

Shadow of the Beast

Want a T-Shirt with your game? Tony Horgan says get *Psygnosis*' best yet...

Barbarian and Obliterator both showed how good an arcade adventure can look, but as you probably remember, the code behind the graphics did not quite come up to the same standards. They both looked great in still shots, but once they moved, the slow flickering animation came as a big disappointment. No such disappointments are in store with *Beast*, which looks even better on the move!

It is all about this poor mutation, who was stolen from his parents as a child. Then, he was a perfectly normal human baby, but the minions of the Beast had plans for him. A course of potions, consisting of

the blood of various rare animals, was fed to the child, who was gradually transformed into a hideous, but immensely powerful creature. For years he served the Beast as his warrior messenger, unaware of the events that had led to his current state. All was well, until the secret was leaked. That really got our hero's goat, so off he set to put an end to his evil master.

You begin in a picturesque, lightly wooded area of the country. Unlike most arcade adventures, here you get the choice of exploring either to the left or right of your start position. Which ever way you choose, you will be amazed at what you see as you



move. The entire background (and a little of the foreground) is split into numerous planes, each of which scrolls perfectly smoothly at its own rate. The result is a brilliant illusion of depth, from the pale moon in the sky, right up to the immediate foreground, with the central character set a little way into the scene.

Fancy scrolling aside, the opening stages play like a straight arcade game. Bats, monsters and boulders fly onto the screen, only to receive a punch in the face and fly off again. Once you venture through one of the doorways in the scenery, things take on a flavour reminiscent of a traditional adventure game. A snatch of text fills you in on the horrors that await you, along with a still depicting your surroundings. The next section loads in and you're off again. Down in these spooky caverns, the adventure element appears once more. An enormous creature blocks your way, and seems to be invincible. Could that orb in the hands of the fire-breathing demon be of any use?

All the time, the foul guardians of the Beast get ever more deadly. Most give you a fair go, but some



do have an annoying habit of popping-up from the ground unannounced. You start out with twelve lives, but these disappear at a hefty rate. Luckily there are small life-giving potions strewn about the game, some adding a couple of lives, some completely topping up your supply.

Equalling the standards of graphics and gameplay is the music. David Whittaker seems to be everywhere at the moment, but he has not skimped on his work for *Beast*. As you enter new locations, and even as the pace quickens with enemy ambushes, the music changes to suit the mood. Just how many pieces there are, I can't say, but if I tell you there is 900K of it, you should get the picture. These superb pieces tend to overshadow the sparse effects.

There are a couple of things I especially like about *Beast's* gameplay. The first is that it is not linear. You are not forced to tackle the onslaught from left to right, or go this way because the computer says so. The land, caverns and castles can be explored in almost any order you like. In fact, it is up to you to find out the correct order, as some places are only accessible if you've been somewhere else. The second point is the feeling of achievement and



progress you get after discovering a new area, which you know holds yet more graphical masterpieces.

There still remains the question of the pricing. Obviously the programmers have worked primarily on the Amiga, which does not present a huge market for the games sales. The inclusion of a free T-shirt does increase the value, as long as you want the T-shirt in the first place. This is obviously a method of increasing the package's apparent value, at the same time bumping up the profit margin. It may be that this is the only financially viable way of producing such a game, but all the same, £35 is, in my opinion, too much for a computer game. There is a paragraph in the manual stating that piracy levels may force the programmers to write solely for consoles. Priced as it is, I can see many more people turning to pirate copies of the game, simply because they cannot afford to buy the original.

I don't want to finish on a bad note, so if you have the cash to spare, you will kick yourself if you miss *Beast*. Another in the rare breed of "real" Amiga games, which actually does something worthwhile with all those extra chips. The best from Psygnosis without a doubt.

T.H.

Graphics: 9 Sound: 9 Playability: 8
ABSOLUTE VALUE: 7 Price: £34.95



Give it Some Stick!

Tony Horgan slates, rates and celebrates some of the joysticks currently competing for your cash

Wizmaster £12.95

If you like those control pads used by the games consoles, the Wizmaster could be just the ticket. A diamond-shaped pad on the left is used for movement, while a couple of independent fire buttons are located on the right, with the autofire in between. Two miniature sticks are supplied, which screw into the controller.

Although the direction controller is small, it's not small enough for accurate movement. Had it been more the size and shape of the Nintendo Game and Watch games, there would be no problem. The smaller of the two screw-ins is too small to create any leverage, and just makes matters worse. The longer options is more comfortable, but equally inaccurate. Despite their dead feel, the fire buttons worked fine. However, each time I tested it for precise control, as demanded in Kick Off, Super Hang On or IK+, the Wizmaster failed to make the grade. The inertia found in Xenon II tends to gloss over such faults, and with the autofire, the Wizmaster clawed back a few points. It would be far from my first choice, but it's worth a look for any fans of these console-type controllers.



Joyboard £24.95

Bells and whistles are in abundance on the Joyboard. For your money you get a stick, two fire buttons, an autofire

toggle, an autofire speed knob, a paddle/joystick toggle and two paddles.

It's a shame that paddles have been neglected by games programmers. Their potential for driving games in particular is rarely tapped. In any case, if you come across a game with a paddle option, you'll be glad you've got your Joyboard to hand. The variable autofire can be useful if a game blocks extremely rapid fire. The two fire buttons seem fine at first, but after extensive use they constantly get stuck down. The stick is fairly accurate, but travels a little further than is ideal. If your fire buttons hold out, the Joyboard will make an excellent buy, and if not, I'm sure Euromax would not hesitate in replacing it.

Professional Autofire £18.95

Two microswitched fire buttons at the front allow for right or left handed use. The stick is also microswitched, with a small amount of travel. Protrud-



its stronger points. Primarily designed for table top use, it has the advantage of leaving one hand free for keyboard operation/kebab guzzling. However, pick it up, and the turbo vents that once looked so attractive, are now a pain in the neck, as they cause the base to drop off exactly where you need to grip it. Not a stick for anyone who demands precision, but flight fanatics may find room for it.

Speedking £14.99

The stick responsible for bringing the word "ergonomic" into many a kid's vocabulary is still a favourite now. Designed to be held in a cupped left hand, with the right hand operating the short stick, it houses an autofire at the rear.

There are two main problems I find with the Speedking. Rapid manual fire can give your index finger cramp, but this can be countered by the autofire. The other concerns the stick, which although short, manages to be inaccurate when it comes to diagonals. Having

ing from a rear corner is the autofire toggle.

This is my fave by far. Its fire buttons give excellent results, and the stick is superb. Diagonals are no problem, and the stick always does what you tell it. On top of that, the whole thing is very sturdy. I've had my vurrent Professional Autofire for around a year, used it almost everyday of the week, and it's never let me down. It's still as good as the day it was made and if anything its even better now it's broken-down.

Quickjoy III £9.95

One of the cheaper sticks around, the Quickjoy III is also one of the more stylish (and before you write to com-



plain, Mrs Green of Southampton, that comment has nothing to do with the stick's phallic lines). Two microswitched fire buttons are located at the top of the shaft, which itself is also microswitched.

The fell of the stick is very sluggish, reminiscent of a sink plunger in a bowl of jellied eels. Precise control is not one of

grown up on the Kempston Competition Pro, this completely alien design has never agreed with one of those ergonomic keyboards. Newcomers to computer gaming often find it more manageable than the traditional sticks. Not my jumbo mug of tea and biscuits, but it's definitely worth a try.

T.H.



MERLIN

BATMAN AND MERLIN...A DYNAMIC DUO

ZAP!, KAPOW!, ZOWEE!, KARUNCH, SMAK!...

That's right, straight from Gotham City (or the Commodore warehouse) comes the incredible, the **AMAZING, NEW AMIGA BATMAN PACK...**

Now you can laugh as much as Joker and cash in with some GREAT QUALITY GAMES. The Batman Pack includes **ALL OF THE FOLLOWING...**

Amiga A500 with Modulator
1 Meg Internal Disk Drive
Mouse
512K RAM
Kickstart 1.3
All Connecting Leads
Two Operation Manuals
Workbench 1.3 System Disk

A REAL 'BAT-BARGAIN' AT ONLY...

£369

Inclusive of VAT and Postage!

PLUS...
BATMAN THE MOVIE
F 18 INTERCEPTOR
NEW ZEALAND STORY
DELUXE PAINT II

A PACK TO KEEP YOU SPELLBOUND THIS CHRISTMAS!

THE SORCEROR'S PACK

If you don't think you've got enough to keep you going with the Batman Pack, consider this **EXTRA SPECIAL PACK...**

Let Merlin wave his wand and as well as the Batman Pack above you'll get Ten Great Games worth a staggering £229.50!

The Sorcerer's Pack consists of...

The Batman Pack as listed above, Amegas, Art of Chess, Barbarian the Ultimate Warrior, Buggy Boy, Ikari Warriors, Insanity Fight, Wizball, Thundercats, Mercenary Compendium and Terrorpods!

ALL OF THIS FOR JUST... £389

JUST A SELECTION OF SOME OTHER WIZARD DEALS!

PRINTERS

STAR LC10 Mono.....£169
STAR LC10 Colour.....£209
STAR LC 24 10.....£249
NEW STAR LC10 MKII...£189

MONITORS

PHILIPS CM 8833..**CALL FOR**
CBM 1084.....**PRICES!!**
CBM 1084S.....£259

(Due to availability of monitors, prices may vary. Please phone for latest information)

DISK DRIVES

A 590 20Mb Hard Disk.....£379
VORTEX 40Mb Hard Disk...£499
CUMANA...
CAX354, 3.5" Floppy.....£89
CAX 1000 5.25" Floppy.....£125

ACCESSORIES

A501 RAMPACK.....£139

A host of accessories are available from Merlin Express at competitive prices. Just phone to obtain a quote for whatever you need.

ALL OUR PRICES INCLUDE V.A.T. AND POSTAGE FOR ADVERTISED PRODUCTS, SUBJECT TO AVAILABILITY, E&OE.

ORDERING: Just phone our order line using your Access/Visa card, OR, send a cheque/ postal order with requirement details. (Cheques need clearance prior to despatch)

DELIVERY: You choose either, by post at no extra cost, or simply add £5 per large item for next day courier service.

WARRANTY: Goods that prove faulty within 30 days will be exchanged for NEW. After 30 days, but within 12 months, faults will be repaired at our expense.

MERLIN

EXPRESS LIMITED

DEPARTMENT AUI/M1, 5 REDWOOD COURT
SALISBURY STREET, NOTTINGHAM NG7 2BQ
Telephone: 0602 424444 (24 Hour Order Line)

GREAT VALUE, THAT'S THE MAGIC OF MERLIN



FROM £349! AMIGA

Prices include VAT, delivery & warranty. Please add £15 for overnight delivery. All systems are tested before despatch. On-site maintenance options available.

Amiga A500 complete, now only	£349
Amiga A500MM with 1900M high-res mono monitor	£429
Amiga A500M with A1084S hi-res stereo colour monitor	£615
Amiga B2000 with 1.3 Roms & software & 1MB chip-RAM (UK version)	Phone
Amiga B2000M As above, plus A1084S stereo colour monitor	Phone
Amiga B2000 XTM As above, plus PC-XT bridge board & 5 $\frac{1}{4}$ " drive	Phone

Amiga 2000 Presentation and AudioVisual systems ... Call

PERIPHERALS AMIGA

A2620 68020 Accelerator Card	Phone
A2286 PC-AT board & 5 $\frac{1}{4}$ " drive	Phone
A2088 PC-XT board & 5 $\frac{1}{4}$ " drive	Phone
C2058 8MB Board, 2MB installed RAM for above, per 2MB ...	£425
20MB Amiga/MS-Dos hard disks	£350
20MB autoboot hard disks from ...	£229
40MB autoboot hard disks from ...	£495
Flicker Fixer Multiscan Adaptor	£795
NEC 3 $\frac{1}{2}$ " Internal drive	£375
	£79

3 $\frac{1}{2}$ " DS/DD diskettes, per 10	£10
A501 plug-in RAM/clock 512K	£119
1MB/1.8MB plug-in RAM/clock	Phone
NEC 3 $\frac{1}{2}$ " half-height drive NEW!	£89
A590 20MB autoboot hard disk	£375
RAM for A590, per MB ...	£175
Amidrive 50MB SCSI hard disk	£459
1900M high-res mono monitor	£115
MPS 1230 120 cps draft, 30 NLQ	£149
Star LC10C Multifont Printer	£179
Star LC10C colour, 120 cps, NLQ	£229
HP DeskJet+ 300 dpi inkjet, B/W	£695
HP PaintJet colour inkjet 180 dpi	£889
DXY1200 A3 8 pen plotter	£1159
Trackball Marconi RB2	£59

Vortex 40MB fast hard disk: autoboots from 1.2 Roms! £529

Why not enjoy the free Teletext databases with the MicroText Teletext adaptor... Fully programmable, with Fastext facility, instant access to last 16 pages, double page view, telesoftware loader, auto-start/background operation... Pages can be spoken, printed as ASCII or graphics, saved as ASCII or IFF files... With digital tuning for crystal clear colour TV/sound reception on any A1081/1084/CM8833 monitor... Now displays satellite weather maps too! Available from stock for only £139!

TELETEXT AMIGA

NEW half-height NEC external drive with switch & throughport £89!

PRODUCTIVITY AMIGA

■ SuperBase Personal	Relational database power, without programming!	39.95	
■ SuperBase Personal 2	As above, plus text, mail merge, batch entry etc.	62.95	
■ " " Professional v3	With Forms Editor and DML programming language	154.95	
■ SuperPlan	Pro Spreadsheet with business graphics, time planner	67.95	
■ MaxPlan 500	Ultimate Amiga spreadsheet, + text/graphics/speech	59.95	
■ VistaWrite Desktop v2	High performance desktop WP, now with HQ fonts	69.95	
■ PageStream v1.6	High quality output, Preferences/PostScript compatible	149.95	
■ Professional Page v1.2	Includes WP, Desktop, colour separations, CAD	189.95	
■ Personal Tax Planner	UK Income Tax computation program, from Digita	39.95	
■ A/C Basic v1.3	By Absoft. Compiles Amiga Basic... FAST!	129.95	
■ SuperBack	Backs up 20MB in 20 minutes, any Amiga hard drive	37.95	
■ Dos-2-Dos	Reads & writes MS-DOS on 5¼" & 3½" Amiga drives	34.95	
■ B.A.D. Disk Optimizer	Speeds disk access up to 500%, WorkBench or CLI	34.95	
■ KindWords v2	£44.95	System Programmer's Guide	32.95
■ Publisher's Choice	79.95	Amiga Basic Inside & Out	18.95
■ ProText v4	79.95	AmigaDos Inside & Out	18.45
■ Amiga C for Beginners	18.45	Amiga 3D Graphic Prog. In Basic	18.45
■ Amiga C Advanced Programmers	24.95	Amiga Tricks & Tips	14.95

Lattice C v5	£179.95
Lattice C ++	289.95
C64 Emulator v2	39.95
PC Emulator v1.1	24.95
BBC Emulator v1.2	44.95
Workbench v1.3 Enhancer	15.95

SuperPic real-time PAL colour digitiser and genlock £495!

CREATIVITY AMIGA

■ Music-X	"Without doubt the best piece of MIDI software to date"	199.95	
■ Sculpt-Animate 4D	3D graphics and animation for the professional user	369.95	
■ Sculpt 4D Junior	As Sculpt 4D above, without HAM ray-tracing	109.95	
■ Sculpt Animate 3D XL	Much faster than Sculpt 3D, with 24-bit plane option	129.95	
■ Pro-Video PAL Plus	Professional video titler with fonts, extra fonts available	189.95	
■ SummaSketch Plus	12x12 Graphics Tablet with fast driver software	425.00	
■ PAL Rendale Pro	Broadcast quality genlock for the professional user	625.00	
■ Professional Draw	£114.95	MiniGen	99.95
■ Aegle Draw 2000	179.95	DigiView Gold	129.95
■ X-Cad Designer	89.95	Fantavision	34.95
■ X-Cad Professional	399.95	PageFlipper + F/X	79.95

Animgic	£64.95
Design 3D	69.95
DigiWorks	89.95
Digipaint 3	59.95
De Luxe Paint III	62.95
Photon Paint II	69.95

IF YOU WANT IT TOMORROW... CALL US TODAY! 01-546-7256

Prices are POST FREE & include VAT. Order by phone with your credit card, or send cheque/PO or your credit card number. Official orders welcome. We despatch same day by FIRST CLASS post. Please allow 5 days for delivery of hardware orders. Prices are quoted subject to availability.



LAKESIDE HOUSE, KINGSTON HILL, SURREY, KT2 7QT. TEL 01-546-7256

NEW FOR YOUR COMMODORE FROM TRILOGIC!

AMIGA AUDIO DIGITISER

— NEW, CHOOSE MONO OR STEREO VERSION

Both Amiga audio digitisers give superb performance, unsurpassed at the price. No software is supplied, since they are fully compatible with Perfect Sound, Prosound Designer, Audiomaster, and Datel's Prosampler. Sampling rates up to 60KHz are possible depending upon the software. An audio lead is supplied for connecting to the headphone socket or line output of a radio, personal stereo, keyboard etc. Full instructions are included, and the mono version also has an L.E.D. overload indicator. A public domain "Sound Workshop" disk is available which has demo versions of Audiomaster & Perfect Sound etc.

MONO DIGITISER	£27.99 POST FREE	STEREO DIGITISER	£37.99
SOUND WORKSHOP DISK			FREE WITH DIGITISER
ADAPTOR FOR A1000			£2.00

EXTERNAL 3.5" DISK DRIVES

- 880K FORMATTED CAPACITY
- THROUGH POST
- SLIMLINE STEEL CASE
- VERY QUIET OPERATION
- LOW POWER CONSUMPTION

3.5" DRIVE WITH ON/OFF SWITCH £79.99 POST FREE



AMIGA MONITOR & PRINTER LEADS

RGB TV & MONITOR LEADS

We have leads to connect all AMIGAS to your TV or colour monitor provided it has an RGB input socket. All leads give a much clearer picture than using the AMIGA MODULATOR, permit ALL 4096 colours to be displayed and include the audio lead (to give stereo with stereo TV's).

ORDER AL 1 FOR TV'S WITH 21 PIN EURO (SCART) SOCKET.	
FITS PHILIPS, FIDELITY, SONY, GRUNDIG, NORMENDE, ETC.	ONLY £10.99
ORDER AL 2 FOR FERGUSON TV'S WITH 7 or 8 PIN DIN SOCKET.	
MODELS MC01 & MC05, ETC.	ONLY £10.99
ORDER AL 4 FOR HITACHI & GRANADA TV'S WITH 7 PIN DIN SOCKET.	
MODELS CPT1444, ETC.	ONLY £10.99
AMIGA TO MULTISYNC MONITOR (analogue RGB) AL11	£9.99

MANY OTHER AMIGA MONITOR/TV LEADS LISTED IN OUR FREE CATALOGUE. OUR LEADS ARE GUARANTEED TO WORK WHERE OTHERS DON'T! LEADS ALSO AVAILABLE FOR ATARI/ST RANGE. PLEASE CONSULT US IF IN DOUBT.

NEW — MONITOR SHARER

SHARE 2 COMPUTERS WITH ONE TV/MONITOR

Plug-in the smart leads from any two computers eg AMIGA & ST, and connect the SHARER to the tv or monitor's scart socket. Just press the switch to instantly select either computer MSW £15.99

OTHER LEADS

AMIGA 64 EMULATOR LEADS	AEL 1 ONLY £4.99
MODULATOR EXTENSION LEADS	MEL 1 ONLY £8.99
AMIGA PRINTER LEAD — Parallel Type 1.5M long	AMP 1 ONLY £6.99
3.0M long	AMP 3 ONLY £9.99
AMIGA A500/BBC EMULATOR LEAD	BE1 ONLY £7.99
AMIGA A500 TO SERIAL (RS232) PRINTER 1.5m	RS1 ONLY £9.99
AMIGA A500 TO MODEM (25W 'D') 1.5m	RS6 ONLY £9.99
AMIGA NULL MODEM LEAD — LINKS TWO A500s 1.5m	RS5 ONLY £7.99
AMIGA TO HIFI LEAD 3m 2 PHONO PLUGS EACH END	HL1 ONLY £4.99
AMIGA TO HIFI LEAD 5m 2 PHONO PLUGS EACH END	HL2 ONLY £5.99

OTHER LENGTHS OF LEAD AVAILABLE — PLEASE SEE OUR CATALOGUE

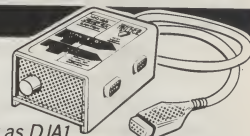
EXTERNAL DRIVE SWITCH FOR DF1	ADE3 ONLY £8.99
EXTERNAL DRIVE SWITCH FOR DF1 & DF2	ADE4 ONLY £10.99

PLEASE STATE WHICH AMIGA YOU HAVE WHEN ORDERING

MOUSE/JOYSTICK SWITCHER

- NO MORE UNPLUGGING MOUSE WHEN JOYSTICK REQUIRED
- EXTENDS THE PORT FOR EASIER ACCESS
- SAVES WEAR & TEAR ON THE MOUSE PORT
- PUSHBUTTON SWITCH CAN BE OPERATED WHEN THE COMPUTER IS ON

NEW COMPACT DESIGN £12.99 order as DJA1



AMIGA MINI STEREO AMPLIFIERS

MINIAMP 2 combines a mini stereo power amp with two neat speaker units which connect directly to your AMIGA. They are ideal for use with mono TV's & monitors, & simply plug in for instant stereo sound. You'll be amazed at the difference. MINIAMP 2 WITH REMOTE VOLUME CONTROL & ALL LEADS ONLY £19.99



MINIAMP 4 comprises separate 4 watts per channel high quality mini stereo amplifier with loudspeaker/headphone socket, separate speaker units with 4" twin cone drivers, mains power pack & connecting lead for AMIGA.

CAN BE USED AS 'WALKMAN' BOOSTER & WITH OTHER COMPUTERS
MINIAMP 4 STEREO AMPLIFIER SPEAKER SYSTEM MA4 £34.99

NEW — AMIGA MIDI INTERFACES

MIDI INTERFACE 1 FOR A500/2000 OR A1000	MIF1 £29.99
This has MIDI IN, OUT & THRU sockets.	
MIDI INTERFACE 2 FOR A500/2000 OR A1000	MIF2 £34.99
This has MIDI IN, MIDI OUT, MIDI THRU plus 2 UNIQUE switchable MIDI OUT/THRU SOCKETS to save you having to swap MIDI leads when using more than one MIDI instrument. FREE MIDI LEAD WITH BOTH INTERFACES	

SUNDRY ITEMS — BARGAIN PRICES

SONY 3.5" DISKS 100% Guaranteed DS/DD disks					
Lowest Prices	Per 10	£12.99 & Postage	Lowest Prices	Per 25	£28.49 Post Free
Lowest Prices	Per 50	£55.99 Post Free	Lowest Prices	Per 100	£99.99 Post Free
1/2" DISK BOX FOR 40 DISKS. SMOKED LID, LOCKABLE, DSB4					ONLY £8.49
1/2" DISK BOX FOR 80 DISKS. SMOKED LID, LOCKABLE, DSB6					ONLY £9.99
A500 DUSTCOVER. ANTISTATIC TYPE, ADC1					ONLY £4.99
A4 NON-SLIP MOUSEPAD, AFM1					ONLY £4.99

WE ALSO STOCK AMIGAS, PCs, PRINTERS, MONITORS, HARD DISKS, MEMORY EXPANSIONS, VIDEO DIGITISERS, SELECTED SOFTWARE & BOOKS — PHONE FOR OUR FREE 20 PAGE CATALOGUE. TRADE ENQUIRIES WELCOME. Please add 75p part postage — packing to orders under £15.00

FREE CATALOGUE WITH ALL ORDERS EXPRESS DELIVERY £1.99 Extra



TRILOGIC, Unit 1, ENQUIRIES 0274 678062
253 New Works Road, Bradford BD12 0QP
Tel 0274-691115 Fax 0274 600150

* FAST MAIL ORDER SERVICE - PROMPT DESPATCH - ALL PRICES FULLY INCLUSIVE PLUS 10 DAY MONEY BACK GUARANTEE ON ALL ITEMS. PAYMENT BY CASH, CHEQUES PAYABLE TO TRILOGIC BY POSTAL ORDER, ACCESS OR VISA. ADD £2.99 EXTRA FOR EXPORT ORDERS. PAYMENT IN STERLING ONLY PLEASE.

INTUITION IV: GADGETS PART 2

*Mike Nelson continues his series on
Intuition gadgets*

We have described how to design your own gadgets and now we shall take a look at incorporating those hard-drawn icons in your programs. Once all the images have been defined, we do the Gadget structures. These follow the usual pattern for Intuition data structures and, we hope, are becoming more familiar as you use them. There are several common features displayed by the various structures for menus and gadgets including the various sets of coordinates, some of the flags used in signalling events, and the reliance on linked lists to ease the set up part of the proceedings.

THE GADGET STRUCTURE

As usual, these are declared at the top of the program and the compiler is left to sort out the precise details of what goes where. Before considering the different types of gadgets included this month, I shall first discuss the Gadget structure, found somewhat expectedly, in the intuition include file. The first member is simply a pointer to the next gadget in the linked list. This is a handy way of doing things since all we have to do to add a list of gadgets as long as your arm (or even longer if need be), to the window, is to include a pointer to the first structure in the NewWindow structure.

Next, we have the usual coordinates to map out the select box, corresponding to the area on screen where clicking the left mouse button will activate the gadget. These are actually more complex and hence versatile than they may

first appear. But surely coordinates are coordinates; numbers specifying a distinct displacement from somewhere? Indeed they are but Intuition is very flexible about the where, allowing you to place gadgets in the border areas of windows and automatically moving them around when the user re-sizes the window or moves it about. All the gadgets in the program below reside in the comfort of the outskirts of the window, either in the drag-bar or along the bottom. This is by no means the only place for them but in the context of the program it would have been rather inconvenient to place the gadgets in the drawing area where all sorts of nasty things could have been drawn over them!

The next field is the Flags member. This is used by both your program and Intuition as a kind of information exchange. It contains details of how the gadget should be drawn initially, and highlighted when selected - whether an alternative image should be drawn, the colours changed, a box drawn around it or, easiest of all, nothing. In addition to all this, the details of how you wish the coordinates above to be interpreted are given. Because you don't know the size of the window from one moment to the next (users are able to re-size windows) you can specify which border the coordinates are to be relative to. For instance consider the first gadget in the list, "Stretch". I took the idea for this from WordPerfect, the only Amiga word processor with street credibility as standard.

Selecting the gadget will enlarge the

window to fill the screen and also move it to the top left. Clicking again will send the window scuttling to the bottom right, a mere shadow of its former self, thus saving you doing a re-size and drag maneuver yourself. Trivial perhaps but it is sometimes useful.

The gadget lives in the top right of the window, next to the depth arranging gadgets. The select box is always 80 pixels from the right edge of the window, zero pixels from the top, is 29 pixels wide and 10 pixels deep. The flags variable for this has GADGHCOMP, GADGIMAGE and GRELRIGHT set. In English this says: "When the user selects me, use the other colours to highlight this fact. To draw me, use the Image structure pointed to later on and render the icon relative to the right side of the containing Intuition element (in this case a window, but it could be a requester)".

On the other hand, the colour gadgets are in the lower border of the window and so have GRELBOTTOM set instead of GRELRIGHT. Note that if neither of these flags is set, Intuition assumes that the coordinates are relative to the top left of the window/requester. As if this was not enough, it is possible to set flags to specify that the width and height of the select box are also relative to the size of the window. Thus if the window is increased in size, so does the gadget select box. This is most useful in proportional gadgets, a subject we shall tackle in a subsequent article on requesters. Finally, the toggle on/off and "Gadget disabled" status of the gadget is also represented in this

continued on page 104

Amiga P.D. Software Disks

Accessories

£2.50 each or £19.99 for 10 including plastic box

SLIDESHOWS & GAMES

Slideshow 1 - Disk 56:
Amiga, Moth, Money for Nothing, Boats, Robot, Roland Keyboardsynth, Chess Game, RBotort - Pet, Al-At's (from Star Wars).
Slideshow 2 - Disk 57: Modern Style, Arty - Paradise Pictures.
Tigers, Birds, Horse, Vampires, SpaceShip, Paradise, Tigers 2, Piano, Sunset and others.
Slideshow 3 - Disk 107: Arty, Dungeon & Dragons Style.
Wrestling, Man, Robotman, Wizardess, Warrior Woman, Woman's face, Soft Pom.
Slideshow 4 - Disk 108: All done in advert style.
Opocsi Picture, Magazine, Tigers, Old Mercedes, Roland Synth, Lemancer, "Communication Art", Docklands, Tank, Exotic car, Skiman and others.
Slideshow 5 - Disk 145:
Ode from Garfield strip, Train, Startrek, Angel, Exotic Car, Bees, Rocket Ranger picture, Aegis Sonix title picture, Start Trek 2, Jet, Horses, Lighthouse, Picture from Rocket Ranger, Opocsi, Porsche, Porsche Flat-Top, Porsche (red) and others.
Slideshow 6 - Disk 147:
Formula 1, Jazz, Rampage, Space gun, Space Harrier, Raytraced Room, Madonna, Tripods, Aegis Animator, Chessmaster 2000, Defender of the Crown, Electronics Arts Logo, Dragons Head, Uninvited, Washington DC, Abraham Lincoln, Earth, Woman.
Slideshow 7 - Disk 148:
Grimlins, Greek, Aquarium, Space, Forest, Cars + Bikes, Cars, Moon Landing, Earth, Porsche, 3 Stooges, Parrot, 3 Stooges, Woman on bed, Topless woman.
Slideshow 8 - Disk 149:
Amiga, American Village, Bugs Bunny, 3 Stooges, Marie Hemmingway, Naked woman, Mountains, Money for Nothing, 3 Stooges, Telecommunications, Diamond ring, Hot dog, Voyager, 3 Stooges, Parrot, 3 Stooges, Woman on bed, Topless woman.
Slideshow 9 - Disk 170:
Magnificent Force, The Web, Cartoon Picture, Roadblasters, Full Metal Jacket, Tiger, Flash Gordon.
Slideshow 10 - Disk 208:
Marble, Horse & Carriage, Butterfly, Glassballs, Mug, Raytraced Amiga, Raytraced Jet, Pattern, Glassballs, Woman, Lamborghini, Liberty, Lion, Ford model T, Asteroids, Oldman, Woman Wizard, Woman, Mostly Women in various Magical poses.
Games 1 - Disk 229: Egyptian Run, Asteroids, Backgammon, Gravity Wars
Games 2 - Disk 125: Triclops, Asteroids, Revers (Othello type game)
Games 3 - Disk 141: LightCycles, Missile Command, Space Invaders
Games 4 - Disk 156: Backgammon, Yacht, Missile Command, 3D Breakout, Asteroids
P.D. Adventure - Disk 154: Complete Adventure writing system. Comes complete with demo adventures written with the program.

AMICUS, UTILITIES, F.A.U.G., (GOLD) FISH

Best of Amicus #1 Disk 32 Amiga Basic programs, Perfect Sound, diskcat
Best of Amicus #2 Disk 35 'C' Examples, HP-10C Calculator, ARC, Printer Driver generator, DiskSav, Double base, ShowPrint II
Best of Amicus #3 Disk 36 WBLander, Piano, Hockey (Card Game), Mouse Target,

GOMF, Starchart, RSL Clock
Best of Amicus #4 Disk 37 Printer Utils, Iconmaker, Basic programs, Workbench Hacks, Diruthi, Cii info, Spritemaster
Amicus #6 Disk 104 Slideshow
Amicus #14 Disk 105 Replacement Clocks, AmigaBasic programs, DOS Helper, Oings
Amicus #19 Disk 106 Basic Gadgets, 'C' Utils, Waveform Workshop, Amiga Monitor, Bards Tale cheat, Pictures
Utilities #1 Disk 142 Funkey, QuickFix, Overscan, DOSHelper, Sprite ED, SYSmonitor
Utilities #2 Disk 143 Clocks, ASM, Menueditor, Fontedit, Browser, MCAD
Utilities #3 Disk 144 DirMaster, NewZip, Supermort, Egraph, Bigview, Perfect Sound, Diskman, Mandelbroom
Utilities #4 Disk 178 Fpic, X-Spell, Calendar, Playback, Journal, DosPlus
Utilities #5 Disk 179 Advsys, Amigazzer, Printer Driver generator, Printext, Othello, SpaceAce, Chess
Utilities #6 Disk 225 DiskX, VirusX, ScreenX, TaskX, Dmouse, Quickbase, Memopad
Utilities #7 Disk 226 DiskSav, Amigaboot info, Iconfun, ScreenZap, Setprefs, 60 or 80
Various #2 Disk 169 RSL Clock, Amcat, AmigaSpell, Icontype, Recoverable Ram Drive, BlackBook, Hexcalc, DX-Synth
F.A.U.G. #26 Disk 109 The Baby Animation
F.A.U.G. #58 Disk 110 Boing Machine, Wavebench, Amiga wireframe demo, Space Invaders, Halfbreed Hill
F.A.U.G. #60 Disk 111 Khanackers animations, Rocker animation, Juggler animation
F.A.U.G. #64 Disk 112 Pictures, use in DeluxePaint or any other art program
Goldfish #1 Disk 113 Triclops game, Gravity Wars, Lightcycle, Shanghai Demo, Rot (3D Animation) + Lot or workbench hacks
Goldfish #2 Disk 114 Compressor - ARC - + utilities

LATEST TITLES

Debbie Gibson Demo
Agatron Disk 1
Intros 13
Flash Team
Agatron Disk 2
Rip Demo
Agatron Disk 3
Acid Demo
Comrade J's Demo Disk
Share & Enjoy
Megaforce Demo
Vindex Demos
Max Headroom
Magnificent Force Demos
Fitz Demo
Manix Demos 1
Manix Demos 2
Suntronic Sounds
Bat Dance Remix
Moria
Crusaders Project Bat
Dexion Mega Demo
Link Megademo
Xenon 2 Demo
Trash & TTB Music
BSI Music
House Disk
Megaforce 1 Sound Explosion
NASA Pictures
Excel UK Demos 9
Suburbia
Intros 14
Music Disk 2
Intros 15
TSK Slideshow
Manix Demos 4
Titanics Music
Crusaders Music

AIRMAIL POSTAGE
EUROPE & SCANDINAVIA ADD £3.50 PER 10
OTHER COUNTRIES ADD £6.50 PER 10

OVER 250 DISKS IN STOCK. SEND S.A.E. FOR FULL LIST

CHEQUES AND POSTAL ORDERS MADE PAYABLE TO:

Magnetic Media

1 Victoria Arcade, Aldergate, Tamworth,
Staffs, B79 7DL. Tel: 0827 59566



RAMSOFT



FORMERLY 16 BIT SOFTWARE

**A PRICE WAR HAS NOW BEEN DECLARED:-
TO THE VICTORS GO THE SPOILS, THIS
MEANS YOU, THE PUBLIC.**



**VICTORY PACK 1:-
AMIGA A500, 512K-MEG INTERNAL DRIVE
W/B.1.3, — BASIC, TUTORIAL & EXTRAS DISKS
MOUSE, P.S.U, MANUALS, & ALL LEADS**

OUR PRICE £329.00 inc. vat.

**VICTORY PACK 2:-
AS PACK 1:- PLUS A CACHE OF TEN GAMES.
1: INSANITY FLIGHT, 2: MERCENARY COMPENDIUM, 3:
AMEGAS, 4: ART OF CHESS, 5: WIZBALL, 6: BARBARIAN,
7: TERRORPODS, 8: BUGGY BOY, 9: IKARI WARRIORS, 10:
THUNDERCATS.**

OUR PRICE £348.00 inc. vat.

**PRINTER PRICE BLITZ
STAR LC-10 MONO.....£149.95. COLOUR £198.00
CITIZEN 120-D £139.00.....ALL INCLUSIVE OF LEADS.**

WHY NOT CALL INTO OUR BARRACKS, WHERE HELPFUL STAFF WILL CATER FOR ALL YOUR NEEDS.
WE ALSO STOCK SOFTWARE AND A LARGE SELECTION OF BOOKS, SPECIALLY FOR THE AMIGA.
BOOK DISKS CAN BE PURCHASED SEPARATELY. DISKS AVAILABLE FOR ALL BOOKS MARKED WITH (D)
£9.95. ALL PRICES SHOWN INCLUDE VAT. PLEASE ADD £5.99 FOR 24HR COURIER SERVICE, SUBJECT TO
AVAILABILITY & CHEQUE CLEARANCE
POSTAGE ON BOOKS INCLUDED IN PRICE STATED. (U.K) ONLY. OVERSEAS ALLIES. PLEASE ADD £5.00.
PLEASE NOTE ALL OUR MACHINES COME WITH A 12 MONTH WARRANTY. ALL MACHINES SUPPLIED BY
OFFICIAL UK DISTRIBUTORS.

**ALL ENQUIRIES TO:- RAMSOFT, UNIT 1, DRAKE HOUSE, 160 DRAKE
ST, ROCHDALE. LANCs. OL16-1PX. WAR OFFICE NO: 0706-43519 -
24HR. LOGGING DEVICE. BARRACKS OPEN. MON-SAT. 09.00-17.30**



RAMSOFT BOOKS

Amiga DOS Quick Reference Guide (Abacus).....	£9.95
Motorola 68000 Programmers Ref Man (Motorola).....	£9.95
1001 Things To Do With Your Amiga (Tab).....	£9.95
Amiga for Beginners (Abacus).....	£12.95
Kickstart Guide to the Amiga (Ariadne).....	£12.95
Kids and the Amiga (Computel).....	£12.95
Elementary Amiga BASIC (Computel) (D).....	£12.95
Amiga Machine Language (Abacus) (D).....	£12.95
Amiga Programmers Guide (Computel).....	£14.95
Amiga DOS Reference Guide (Computel).....	£14.95
Amiga Tricks and Tips (Abacus).....	£14.95
Inside Amiga Graphics (Computel) (D).....	£14.95
Amiga C for Beginners (Abacus) (D).....	£14.95
Amiga Applications (Computel) (D).....	£14.95
First Book of the Amiga (Computel) (D).....	£14.95
Amiga DOS — Inside and Out (Abacus) (D).....	£16.95
Advanced Amiga BASIC (Computel) (D).....	£16.95
Computer Viruses — A High Tech Disease (Abacus — NEW!).....	£16.95
Amiga Users Guide to Graphics, Sound, Telecom (Bantam).....	£16.95
Becoming an Amiga Artist (Scott-Foresman-NEW!).....	£16.95
Amiga 3D Graphics Programming in BASIC (Abacus-NEW!) (D).....	£17.95
Amiga Machine Lang. Programming Guide (Computel) (D).....	£17.95
Using Deluxe Paint II (Computel).....	£17.95
Learning C — Graphics on Amiga & Atari ST (Computel) (D).....	£17.95
Amiga BASIC — Inside & Out (Abacus) (D).....	£18.95
Amiga Microsoft BASIC Programmers Guide (Scott-Foresman).....	£18.95
Inside the Amiga with C(Sams).....	£19.95
Amiga DOS Manual (Bantam).....	£22.95
Programming the 68000 (Sybex).....	£22.95
Amiga Disk Drives — Inside & Out (Abacus) (D).....	£24.95
Programmers Guide to the Amiga (Sybex).....	£24.95
Amiga Programmers Handbook (Sybex).....	£24.95
Amiga Programmers Handbook, Vol 2 (Sybex).....	£24.95
Amiga ROM Kernel Ref. Manual — Includes & Autodocs (A.W. NEW!).....	£29.95
Amiga C for Advanced Programmers (Abacus-NEW!).....	£29.95
Amiga System Programmers Guide (Abacus) (D).....	£29.95

★ ★ ★ ★ ★ RAMSOFT EXTRAS ★ ★ ★ ★ ★

**RAM EXPANSION
512K CARTRIDGE
INCLUDING CLOCK
£39.95**

**CUMANA DRIVE
1 MB 3.5" DRIVE
£79.95**

**Branded 3.5" Disks
£12.00. Box of 10
including label**

**BULK 3.5" DISKS.
£7.99 X10 INC.
LABELS.**

**Coloured disk labels III 2p
each**

**SOFTWARE SPECIALS
FALCON MISSION DISK.**
★ £12.99 ★
**POPULOUS PROMISED
LANDS**
★ £7.99 ★
★ ★ **BEAST** ★ ★
£25.00

continued from page 102

variable.

The next field is yet another set of flags, called Activation to distinguish them from those above, although their function seems to follow on quite nicely. Most of these flags deal with the events after the gadget has been selected, and also set up the type of information passed via the IDCMP. A TOGGLESELECT gadget exists in one of two states, on or off to be exact. We have used this feature for the draw mode part of the program. This mode must be either "draw free hand" or "draw lines" and so we have programmed these gadgets mutually to exclude each other (note that this is not yet supported directly by Intuition).

GADGIMMEDIATE and RELVERIFY are concerned with the IDCMP messages, or, more specifically, when you get to hear about them. Setting the former will cause Intuition to send a message as soon as the user clicks on the gadget, without waiting until the button is re-

"a drag bar requires that the first click sets things in motion and a release to stop things, hence the need for GADGIMMEDIATE."

leased. Release-verify on the other hand ensures that the user selected the gadget and released the left button. This is a kind of in-built safety mechanism to give the user one last chance to cancel the operation about to be invoked by simply moving the pointer off the gadget select box. Try this with a system gadget. Conversely, a drag bar requires that the first click sets things in motion and a release to stop things, hence the need for GADGIMMEDIATE.

FOLLOWMOUSE will give you mouse movement information as long as the pointer does not waver off the select box of the gadget. The sizes of the window borders can be adjusted to cater for larger gadgets using the BORDERFLAGS. There are various other activation flags dealing with requesters and string gadgets which will not be considered until the appropriate article.

The next field is the GadgetType. This must be set to any one of BOOLGADGET, STRGADGET, PROPGADGET, GZZGADGET or REQGADGET as appropriate.

GadgetRender contains a pointer to either an Image or Border structure. These were both covered in the last article and are contained in the file image1.h which was also printed last month. If you want to change the way the gadget looks when selected, you place a similar pointer in the next field SelectRender. This is possibly the most

emphatic way of telling the user something has been selected, short of passing a small current through the mouse buttons! You can also specify text to be printed via the next field - GadgetText. This is simply a pointer to an IntuiText structure.

MutualExclude is not currently supported by Intuition and so this field is ignored. Note that you should not use it for your own data simply because Intuition is not interested, as future enhancements to the system will probably use the field and so your programs will undoubtedly awaken the Guru. You have been warned.

SpecialInfo will be examined later as it pertains to string and proportional gadgets.

The designers of Intuition have been kind enough to allocate the last two members of the gadget structure for our own use. The main GadgetID variable can be used to provide a unique value, identifying the gadget when the IDCMP reports a selection. This is used in the example program and it will be noted that the GadgetIDs for the colour select icons actually correspond to the registers they represent (i.e. zero to three).

SETTING UP THE DATA STRUCTURES

The usual chore of defining lots of macros must be performed first to ensure that the listing is readable. Hopefully most of these are self-explanatory. The GadgetIDs mentioned above are arbitrary numbers, chosen largely by the order in which we included them in the program. Note that the system gadgets are not reported in the same way as your application gadgets and so you are free to start your numbering at any point. We have also used macros for some of the long sequences of flags as it saves typing them out in each structure!

The gadget structures have been discussed previously but note the linked list again appearing. The Stretch gadget is slightly special and is added in later on in OpenStuff(). DrawFree is the first gadget in the list and a pointer to this is stored in the FirstGadget field of the NewWindow structure. Thus, as soon as we call OpenWindow with a pointer to NewWindow, the list of gadgets is submitted one by one automatically for us.

THE PROGRAM PROPER

The global variables are kept to a reasonable minimum and are set up with the default drawing mode to be "FREEDRAW" and default colour to be "COLOUR1" (white). The main() function is kept to a bare minimum as all the processing is handled from the doIDCMP() part of the program.

OpenStuff() does the usual task of opening up the Intuition and Graphics libraries so we can access the routines within to open windows, draw lines etc.

In addition to this we also call AddGadgets() to submit the "Stretch" gadget. The reason for this is related to the position of the icon. It overlaps the drag bar and Intuition always puts its gadgets ahead of yours in the list. This means that if you submit the "Stretch" gadget in the list with the others, it is "superimposed" on the drag bar. The image is shown on screen but when you try and select it, because the select boxes overlap, Intuition gives priority to the drag bar as this is before "Stretch" in the list. You can hack your way around this by submitting "Stretch" with an argument of zero for its position in the list, thereby guaranteeing it is before any of the other gadgets. This seems to work quite well, with the caveat that the gadget gets "ghosted" when the window is inactive. I do not know if this programming is completely within the doctrines of the Amiga and may indeed cause R.J. Michal to strangle his mouse in disgust, but it works! Needless to say you must ensure that none of your gadget select boxes overlap as this may confuse the user of your program.

In order to get Intuition to re-draw the gadgets, you call the function RefreshGadgets(), but use this sparingly as it can take some time to run if the list of gadgets is long. You can specify where in the list Intuition should start to refresh and to minimize the time spent doing this try and put the most refreshed gadgets towards the end of the list.

CloseStuff() is pretty much as you would expect by now with the addition of a call to RemoveGadget() to get rid of "Stretch" before closing the window.

THE IDCMP AND GADGETS

The function doIDCMP() is the real work-horse of the program. With a considerable amount of help from Intuition, all of the input/output is handled here so it is worth taking a close look at how this is accomplished.

Firstly then, a brief overview of the requirements for our simple paint tool. Each time an event is sent to the message port, the program resets the limits for drawing, in case the user has re-sized the window. This prevents those inconsiderate ROM drawing routines from plotting over our nice gadgets. The variables are used in the doDraw() and doLine() functions at the end of the program.

The IDCMP is initially set up (in NewWindow) to send messages for CLOSEWINDOW, GADGETUP (i.e. selected), and MOUSEBUTTONS events. The latter is a new message for us, being sent whenever the left mouse button is pressed or released. We use this to turn on (and off) the drawing but more of that later. A GADGETUP message tells us that the user definitely selected one of the gadgets. The function doGadgets() is called with a pointer to the Gadget

continued on page 110

Learning

£ s



has never been so much

FUN!

You can give your children a head start with the Fun School 2 teaching programs. If you have a computer in your home, you have already realised its educational potential. Database Software and Croftward Publishing brings you a fantastic learning package for both the Commodore 64/128 and Amiga computers. Colourful graphics will entertain and amuse your children, as well as providing comprehensive tuition.

Available for three age groups, the Fun School 2 programs actually monitor the child's progress. The skill level — initially set by the parents — is automatically adjusted to suit the child's ability.

Each package contains: Detailed Instruction booklet giving educational help to parents and teachers, together with a guide to using the programs and a colourful button badge.

FUN SCHOOL 2 for UNDER 6's consists of;

- SHAPE SNAP: COLOURFUL SHAPE RECOGNITION
- FIND THE MOLE: EXPERIMENT WITH NUMBER SIZES
- TEDDY COUNT: IDEAL INTRODUCTION TO NUMBERS
- WRITE A LETTER: CREATIVE FUN AT THE KEYBOARD
- COLOUR TRAIN: PLAY AT SPOTTING COLOURS
- PICK A LETTER: EASY STEPS TO WORD BUILDING
- SPELL A WORD: ENJOY NAMING THE PICTURES
- TEDDY BEARS PICNIC: MOVE AROUND A MAZE

FUN SCHOOL 2 for 6-8 YEARS OLD consists of;

- NUMBER TRAIN: CALCULATIONS MADE ENJOYABLE
- SHOPPING: WHICH SHOPS FOR WHICH PRODUCTS?
- MATHS MAZE: FUN IMPROVING ARITHMETICAL SKILLS
- TREASURE HUNT: AN INTRODUCTION TO CO-ORDINATES
- BOUNCE: GET TO GRIPS WITH ANGLES
- PACKING: DISCOVER INTERLOCKING SHAPES
- CATERPILLAR: WORD-BUILDING CHALLENGE
- NUMBER JUMP: HAVE FUN PRACTISING TABLES

FUN SCHOOL 2 for the OVER 8's consists of:

- BUILD A BRIDGE: SHAPE-FITTING CHALLENGE
- PASSAGE OF GUARDIANS: ENJOY ANAGRAMS
- UNICORN: A TEST OF LOGICAL THOUGHT
- LOGIC DOORS: MAPPING MADE EASY
- SOUVENIRS: AN INTRODUCTION TO TRAVEL
- CODE BOXES: DISCOVER BINARY ARITHMETIC
- MYSTERY MACHINE: CODE-BREAKING FUN
- ESCAPE: A FINAL CHECK ON PROGRESS

Now children can enjoy using their parent's computer while learning at their own pace.

SAVE UP TO £14.95

	COM 64/128 CASS		COM 64/128 DISK		AMIGA	
UNDER 6's	£8.95		£10.95		£16.95	
	SAVE £1	PRODUCT CODE 1-03	SAVE £2	PRODUCT CODE 1-06	SAVE £3	PRODUCT CODE 1-09
6-8 YEARS OLD	£8.95		£10.95		£16.95	
	SAVE £1	PRODUCT CODE 1-04	SAVE £2	PRODUCT CODE 1-07	SAVE £3	PRODUCT CODE 2-06
OVER 8's	£8.95		£10.95		£16.95	
	SAVE £1	PRODUCT CODE 1-05	SAVE £2	PRODUCT CODE 1-08	SAVE £3	PRODUCT CODE 2-07
TRI-PACK	£25.00		£30.00		£45.00	
	SAVE £4.85	PRODUCT CODE 2-03	SAVE £8.95	PRODUCT CODE 2-04	SAVE £14.95	PRODUCT CODE 2-05

PLEASE SUPPLY THE FOLLOWING PRODUCTS

NAME: _____ TO: CROFTWARD LTD
 ADDRESS: _____ 40 BOWLING GREEN LANE
 LONDON EC1R ONE

POSTCODE: _____ TEL: _____ SIGNATURE: _____

Product Code	Description	Qty	AMIGA	COM 64 CASS	DISK	Price
	FUN SCHOOL 2 UNDER 6's					
	FUN SCHOOL 6-8 YEARS OLD					
	FUN SCHOOL 2 OVER 8's					

Please make cheques payable to:

CROFTWARD LTD or debit my

Access/Visa Account:

☐

CHEQUE

ACCESS/VISA

☐

OTHER

☐

P&P

TOTAL

Please add £1.50 p&p for all orders outside U.K. & N. Ireland
 PLEASE ALLOW 28 DAYS FOR DELIVERY

EXPIRY DATE: _____

NETWORKING THE AMIGA

Anthony Mael examines an exciting new development for the Amiga from a company with seven years experience in Commodore products

This summer has seen the release of a networking product for the Amiga, a range of Ethernet Boards designed and manufactured in the UK by HYDRA SYSTEMS. The company has been networking Commodore products since 1982, and HYDRA became the de-facto standard for LAN connection to any of the Commodore range. This new generation of boards comes fairly late to the Amiga marketplace, rocky territory for third party developers, but with growing acceptance of the Amiga as a viable business and professional tool, and a world total of two Amiga ethernet vendors, HYDRA SYSTEMS feels comfortable with its market proposals.

With exciting products such as TCP/IP already beginning to emerge from software developers who have been working with Beta versions of the hardware since early this year, the connectivity question that has dogged potential Amiga buyers and systems constructors alike can now be firmly answered. AMIGANET employs the industry standard Ethernet architecture which occupies the high ground in the PC network world. AMIGANET is compatible with Ethernet Version 2, and is fully compliant with IEEE Standards 802.3 Types A and B, which refer to Ethernet and 'Cheapernet' respectively. Cheapernet uses a much cheaper form of coaxial cable (hence the name), resulting in dramatically reduced installation costs. Further, HYDRA SYSTEMS told *AM* they intend AMIGANET to remain the least expensive high-end network option for the AMIGA.

The Ameristar Networking System from the USA has been available for some time, it is a product aimed very much at the high-end market, running on a SUN NFS (Networking File Server) Network. It has come in for some criticism on the basis of price, (being locked into the SUN NFS architecture), the fact that there has been no Amiga-to-Amiga communication possible, and for Amer-

istar's lack of support for software developers. Consequently, there are few Ameristar installations in the UK.

HYDRA SYSTEMS saw the need to address these problems directly; their seven years experience with CBM products, providing real-world solutions via Networking at the tough end of the market, had already brought them to the Amiga from a different direction.

AMIGANET evolved into the only Ethernet system to offer Amiga-to-Amiga (peer to peer) communication, Amiga File Servers, and a cost-effective A500 version for education. The Operating System was crafted by Perihelion Software in the UK, widely acknowledged as the creators of AmigaDOS.

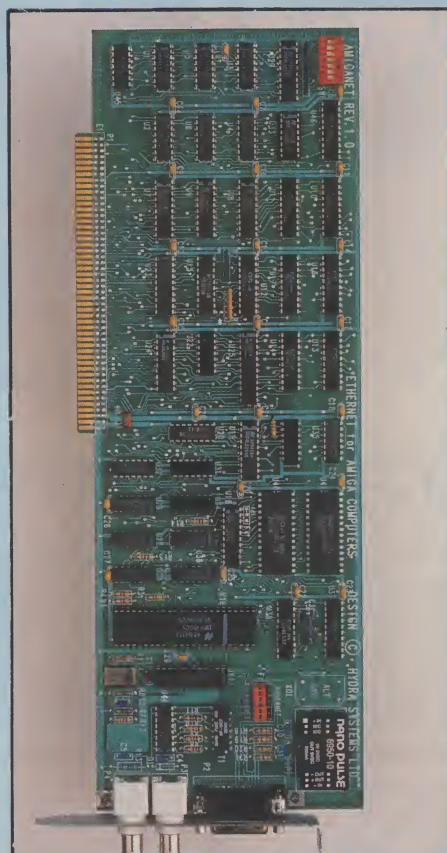
The AMIGANET design philosophy adopted at the outset was to enable virtually instantaneous movement of data of varying types between any of the Amiga products. Image movement between Amigas naturally has a high priority, and AFS, EMAIL, and the TUBE, a high speed data exchange interface, are provided along with a number of other network services. The ability to share files being fundamental to modern database design, any AMIGA on the net can, subject to access permission, access any other screen, storage device or printer on the network, as if it were physically attached locally. All of the functions of the network are usable from the Workbench or the CLI interface, or within programs.

AMIGANET OVERVIEW

AMIGANET Hardware is available in several forms, tailored mainly on the basis of end user cost. The fully loaded version, mandatory for any serious work (such as file service, or any high traffic centralised facility), has a 64 Kbytes of buffer memory, and a 16-bit data path, assisted by a DMA sequencer with a 16 Mbyte address range.

This DMA process is able to move data directly to or from any memory

HARDWARE



location in your AMIGA for example, directly into Video RAM.

To define the position of the AMIGANET Board in the hierarchy of networking hardware, for those of you who need to relate to horsepower, network cards usually boast 8 Kbytes of memory, an 8-bit data path, and no on-board DMA ability. 16 Kbytes is described as an 'Enhancement'.

For this version of the hardware, they have concentrated on technical elegance and delivered horsepower, rather than build cost. Notwithstanding, the maximum-spec. board has a base-line price £350; at the same time they offer detuned versions for cost-sensitive applications.

The base-line AMIGANET board, a low cost education special, has a similar fit to Novell, Western Dig. and other mainstream LAN cards. The mid-range board has 16 Kbytes, 16-bit paths, and DMA. All of the variants are available enclosed in an ABS injection moulded case in the style of the A500, for attachment to that computer.

AMIGANET O/S

There are seven services (so far) supplied as standard with AMIGANET. These include the data and time service, the screen communications service (a kind of chatline; dialogue-based communication), the AMIGANET File System (AFS) and a Remote Printer Handler. Other functions are Email, the TUBE (a high speed data exchange interface), and a Videopix Tube. You may have other services installed on your network such as a print spooler, or TCP/IP support, which will have their own documentation.

AMIGANET has been designed to cope with problems such as disconnection of the network cabling. If this situation occurs, a window will pop-up on your screen to announce this condition. You should examine the cable and connectors (and possibly the users) to make sure there has been no break in, or damage done, to the cable. When the problem has been resolved, network operations should continue from where they were interrupted.

USING AMIGANET

AMIGANET can be started in three different ways:

Starting the Network from the Workbench:

It is assumed that the Software is installed; to start using the network, a double-

click on the ANET Icon in the Workbench window, and then on the StarNet Icon when it appears. StarNet mounts and initialises all the necessary devices, checks the table of Users and their aliases, and activates the network board.

Starting the Network from the CLI:

You can start the Network from the CLI by using the command 'StarNet'. StarNet will be confirmed by the previously described message, which will remain on the screen until overwritten by CLI activity. This is useful for those who miss the twelve digits of the Ethernet address at Logo time, as you might need to use the address for mount listings.

Starting the Network Automatically:

The Network can be activated automatically at your site whenever you turn the computer on, or re-boot it, if you include the command 'StartNet' in your S:startup-sequence File.

Using the Date and Time Server:

AMIGANET operates a network-wide date and time service which can be accessed by any Amiga on the network. Its main function is to set automatically the time and date on machines that do not have real-time clocks. It also ensures that your site operations will be synchronised with the other computers on the network. To execute this function, you issue a special CLI command,

NetDATE, which is provided by AMIGANET.

Talking to Other Users on the Network:

AMIGANET provides a simple CLI command, CHAT, that allows you to send messages from one Network Site to another. This command uses the screen communications service of the target computer to display your message.

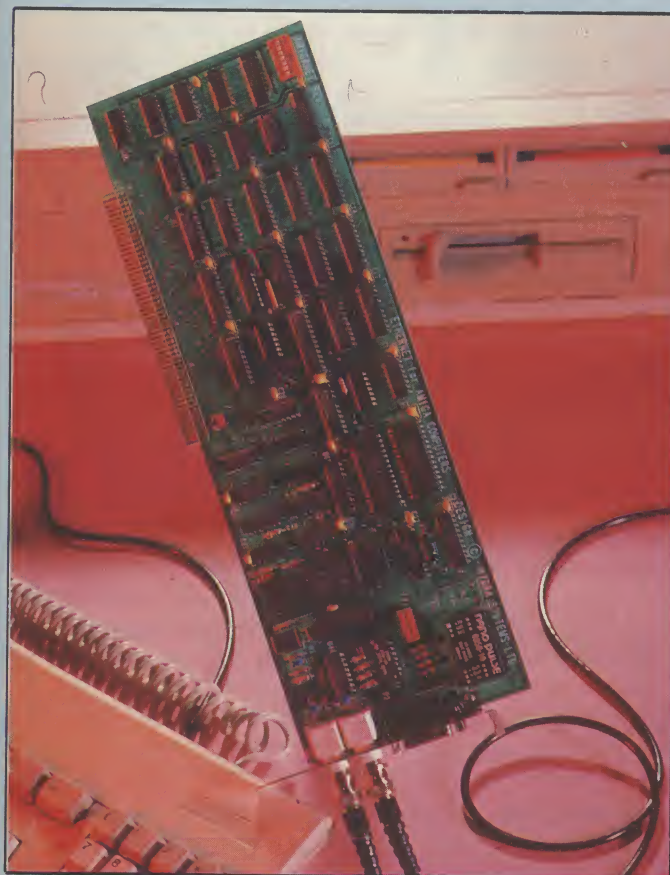
Sharing Files and resources Via the Network:

Users on the network can be allowed access to the disk drives of other computers, as if the disks were connected to their own computer. You will be able to access the Remote disk quite normally, that is, double clicking on its program files will run those programs in your Amiga. All the standard Workbench functions such as RENAME, DUPLICATE, and DELETE, are executable. You may also access a remote machine's parallel or serial ports, via the same structures.

A.M.

For distributor of user information contact: Hydra Systems, Red Lane, Kenilworth, England. Tel:(Int. +44) (203)-471111. Fax:473333.

FOR DISTRIBUTOR OF USER INFORMATION CONTACT: HYDRA SYSTEMS, RED LANE, KENILWORTH, ENGLAND. TEL:(Intnl. +44) (203)-471111. Fax:473333.



NETWORKS

With apologies to Derek and Clive... Networks come in all shapes and sizes, from the smallest Local Area Networks (LANs) to the largest computer systems in the world, where the CPU may be hundreds of miles from the nearest terminal. No matter what the size though, the principals of networking remain the same. Basically the CPU allocates small, priority based, time-sliced hunks to each task (terminal) or device (peripheral). The Amiga performs a similar job in much the same way. Internally, each CLI or task can be thought of as a job on a remote terminal. In practice each terminal gets a certain amount of CPU time and communicates over a hard wired system. The advantage of this is that many people can have access to just a few peripherals - thus reducing the cost. One common way of CPU-Task communication is the "Round Robin" system. For further information listen to Derek and Clive's Letter sketch 17 bit disks, 231+232.



Purple

Public Domain
Software

▼▼ Mega Packs 1 to 10 each consist of 3 disks for £7.50! fully inclusive! ▼▼

- MP 1: Home Business Pack 1, RIM the powerful relational database, UEdit the excellent Word Processor and VisiCalc the spreadsheet.
- MP 2: Communications Pack 1, Aterm V1.3, Star Term V2.0 Argo Term, Kermit Term loaded with features: Xmodem, Wxmodem, autodial, 300-19200 baud rate, macros and many more! Also a list of BBSs around the world.
- MP 3: Graphics Pack 1, CAD Design, Ray Tracer generator, VDraw a fully featured drawing program, Amiga MCAD, loads of picture format converters, and other utilities.
- MP 4: Animation Pack 1, stunning graphic animation demos including Archimedes Cradle, F-15, Rocker, Clown, Lockon, Marilyn, Sunglasses, TBAG 3D, Elgato the walking cat, Red Baron.
- MP 5: Picture Pack 1, packed full of the best Amiga pictures.
- MP 6: Demo Pack 1, Thames TV demo, The Juggler, Jungle Command & others.
- MP 7: Amiga Basic Pack 1, games, utilities, demos, loads of excellent programs.
- MP 8: Game Pack 1, Empire, Gravity Wars, Othello, Pacman, Clue, Cribbage, Back Gammon, Yaltzee, Missile Command, 3D Break out and many more.
- MP 9: Picture Pack 2, packed full of the best pictures including some NASA digitised.
- MP 10: Demo Pack 2, excellent graphics & sounds: New Order Blue Monday digitised sound demo, Ian 'n' Mick and the DOC demo.

▼▼ Mega Packs 11 to 20 each consist of 5 disks for £12.50 fully inclusive! ▼▼

- MP 11: Sonix Music Pack, PD player for Aegis Sonix music program and 4 disks full of music scores.
- MP 12: Miami Vice sampled sound demo of the Miami Vice theme. Excellent graphics and sound.
- MP 13: Demo Pack 3, Einstein, Bruce & Bongos, Anti Trax 2010, Digi Tech & Shore & Enjoy demos.
- MP 14: Demo Pack 4, Sanx, Sanxim, Mark II, Action! and TECHtech demo disks.
- MP 15: Demo Pack 5, Needs two disk drives, New Tek, Pophits - sampled sounds of Pet Shop Boys, Madonna and other pop groups, disk of sampled sounds including Star Wars, Mr Spock etc. and Beatles music over great graphics - Killer Demo.
- MP 16: ABasic Pack, Games, Utilities, demos etc. includes ABasic. Note: ABasic is not Amiga Basic.
- MP 17: Utility Pack 1, Printer Driver Generator, Fonts and Font Editor, Floppy disk utilities, disk copiers, clocks, calendar, directory lister, Virus Checker and other utilities.
- MP 18: PD Experience, a mixed bag of public domain utilities, graphics, demos etc. all disks from the Tampa Bay Amiga Group all auto loading and very easy to use! Simply place disk in your Amiga and turn on! Excellent.
- MP 19: Utility Pack 2, Icon utilities, Mouse pointers, printer drivers and fonts, SCRIMPER (Screen Image to Printer), PopGUI and loads of brilliant utilities.
- MP 20: Picture Pack 3, Needs two disk drives, 5 disks of brilliant HAM and low resolution pictures.

▼▼ What Else ▼▼

We also stock ALL Fred Fish disks and Slipped Disk, TBAG, FAUG, AMUSE, Music, Panorama, APDC, AMICUS and our own PDOM collection plus loads of others.

Our big new catalogue is now available with details of the above disks split into the following sections: Applications, Utilities, Demos, Games, Graphics, Music, Languages, Programmers and Files.

▼▼ How and Where ▼▼

All cheques & postal orders payable to Purple PD, or Visa & Access credit card details to:
Purple PD, 1 Bartholomew Road, Bishop's Stortford, Hertfordshire, CM23 3TP.
Telephone (0279) 757692

NEW.... Ruby-Comm-Plus Communications Software



COMPUTING
LTD

We have listened carefully to our users over the past two years and have incorporated many new features into our Ruby-Comm-Plus package. Ruby-View-Plus now includes character and pixel Cut & Paste. Ruby-Term-Plus now includes Colour ANSI and 4010/14 emulations. Both packages have extensive modem support covering many new models and enhanced Macro key support with automatic loading of Macro key sets for different services. All for only £99.00 Inc VAT and P&P.

Our standard Ruby-Comm package is still available for those who do not require the more advanced facilities, at the new reduced price of only £69.00 Inc VAT and P&P.

Ruby-Tel The Complete Viewdata Host & BB
This package enables you to set up your own Viewdata BB from only £199.00 exc VAT.

For further information on Ruby packages or other Amiga products, please phone us or call in at our showroom.

Y2 Computing Limited Telephone 0923-50161
111 St. Albans Road, Watford, Herts. WD1-1RD

Hobbyte Busbyte Computer Centre

10 Market Place, St. Albans, Herts
St. Albans (0727) 56005/41396

1G The Gallery, Arndale Centre, Luton, Beds
Luton (0582) 457195/411281

LATE NIGHT XMAS OPENING - RING FOR DETAILS

PRINTER/MONITOR BARGAINS

8833 With Lead	£189.00
LC10 Printer	£139.95
LC10 Colour	£169.95
Citizen 120D	119.95
LC24-10	229.95
Prices ex VAT	

ORDERING

To place your order, send cheque, postal order or official order, plus £8 per box (software free) for next day courier delivery and VAT to Dept. AUI., Hobbyte Computers Ltd., 10 Market Place, St. Albans, Herts AL3 5DG, or call with a copy of this ad. at our branches in St. Albans and Luton. You may also phone your order to our sales desk on St. Albans (0727) 56005. Access/Visa and official orders from government, educational, medical authorities and PLCs are accepted.

Commodore Business
Centre, Principle Education
Dealer and Approved
Amiga 2000 Centre

ST. ALBANS
BRANCH OPEN
SUNDAYS
10-4PM FROM
22ND OCT.

AMIGA ACCESSORIES

BBC EMULATOR	£39.95
C64 EMULATOR	£29.95
A500 MODULATOR	£19.95
A501 RAM EXPANSION	£108.95
MINIGEN	£94.95
DIGITISING PACK with Camera, Digiview Gold 3.0, cables	£319.95
PRO SOUND DESIGNER GOLD	£69.95
SUPERPIC	£649.9
CASIO MT 240 KEYBOARD	£119.95
MODEM PACK, AD/AA HAYES V21/23	£249.99
inc. Ruby Prestel/Term Em S/W, cables	

FANTASTIC REDUCTIONS ON AMIGAS

AMIGA 2000 AND ACCESSORIES (ex VAT)

B2000 PACKAGES

AMIGA 2000, Mouse, Wkbench, Basic, Utilities, Manuals	£769
AMIGA 2000, 1084/8833 3.5" AND 5.25" DRIVES and BRIDGE BOARD (giving PC compatibility), Superbase Personal as ABOVE, PLUS AMIGA/PC DOS 20 MB HARD DRIVE	£1045
	£1245

NEW - B2000 - AT-AUTOBOOTING HD PACKAGES

AMIGA 2000 with 1MB Agnes and Denise Chips and 4.6 Board Revision, ready for KS1.4, 1084/8833 Monitor, 3.5" and 5.25" 1.2 MB Drives, 20MB AUTOBOOT HARD DISC AND AT (80286) BRIDGE BOARD, Superbase Personal	£1995
AS ABOVE, BUT WITH 40MB AUTOBOOTING HARD DISC	£2195
AS ANY ABOVE, ALSO WITH PUBLISHERS CHOICE	ADD £60

ACCESSORIES

A2058 8 MB RAM EXPANSION, POPULATED TO 2 MB	£449
£279 off - A2088 XT BRIDGEBOARD WITH 5.25" 360 KB DRIVE	£250
A2286 AT BRIDGEBOARD WITH 5.25" 1.2MB DRIVE	£559
* SPECIAL * - A5060/2092 20 MB PC/AMIGA DOS HARD DISC	£249
A2090A/2092 20 MB AUTO BOOT HARD DISC	£479
A2090A/2094 40 MB AUTO BOOT HARD DISC	£750
A2300 INTERNAL GENLOCK	£187
A2350 BROADCAST QUALITY GENLOCK/FRAMEGRABBER	£545
A2032 PAL COMPOSITE VIDEO CARD	£69
A2010 INTERNAL 3.5" DRIVE	£105

AMIGA 500 PACKS: (inc VAT)

GAMES PACK

inc. Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, Sports Bag, plus 8 additional individually packaged games from the following list:
Custodian, Roger Rabbit, Power Play, Mercenary, No Excuses, Znapse, Nebulous, Star Ray, Spritz Paint
Also with 8833 monitor

NO DEPOSIT
INSTANT CREDIT
AVAILABLE - ASK
FOR DETAILS

£359.00
£569.99

BATMAN PACK

inc. Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus:
BATMAN the Caped Crusader, Interceptor, New Zealand Story, Photon Paint
Also with 8833 monitor

£369.99
£579.99

HARD DISC PACK

inc. Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus:
A590 HARD DISC DRIVE and DELUXE PAINT III
Also with 8833 monitor

£749.99
£959.99

A500 "CLASS OF THE 90s" EDUCATIONAL PACK

inc. Modulator, 24 games on 4 discs: Arcade, Adventure, Board and Shoot-em-up games, plus:
Midi Interface, DPaint II, Superbase Personal, Publishers Choice, Maxiplan 500 spreadsheet, Dr. Ts Midi Recording Studio, Amiga LOGO, BBC Emulator, 5 BBC programmes, 10 Blank Discs, Mouse Mat, Disc Wallet
Also with 8833 monitor

£549.99
£759.99

SCHOOLS AND COLLEGES - BUY 20 - GET 1 FREE.

7 DAY GUARANTEED REPAIR TURNAROUND

A500 PACK PRICES INC VAT

AMIGA 500
HARD DISC
DRIVE
£359 inc vat
and P&P

AMIGA SOFTWARE SPECIALS

TITLE	RRP	SALE	
Photon Paint II	£79.95	£62.95	Best inc T Shirt £34.99 £28.99
Deluxe Paint	£39.95	19.95	Dragons Lair £44.95 £29.95
Deluxe Paint III	£79.95	£59.95	Fiendish Freddie £24.99 £19.99
Studio Magic	£59.99	£39.99	Xenon II £24.99 £19.99
Prism Plus	£47.95	£29.95	
Transformer	£39.95	£19.95	
X CAD Designer	£99.99	£82.99	
X CAD Profess.	£499.00	£329.95	
Textcraft	£47.95	£29.95	
Publishers Ch	£99.99	£73.95	
Champ Baseball	£34.95	£19.95	

Prices correct at time of going to
press, but are subject to change
without notice. E & O.G.

AND LOTS MORE - all titles at
least 15% off
All books 10% off

BEST PRICES ON ALL SOFTWARE
- WE CAN NORMALLY MATCH OR
BEAT ANY GENUINE ADVERTISED
PRICE
Software prices inc VAT & PP

continued from page 104

structure of the selected gadget as the argument. To obtain this pointer, you look in the IAddress field of the IntuiMessage structure. We use the variable GadgetPtr for the pointer for clarity although it is not strictly necessary as you can pass the pointer directly in the function call - i.e. doGadgets ((struct Gadget *) message -> IAddress);

The MOUSEBUTTONS event is trapped at the top of doIDCMP(). The Code field of this message contains the value of either SELECTDOWN or SELECTUP, depending on whether the button was pressed or released. This is very useful for this type of program since you don't have to process mouse movements when they are not relevant -

"We could specify in the NewWindow structure that we always want to receive mouse movement information but this is rather wasteful and anyway we wanted to demonstrate the alternative which is far more cunning."

the user only draws whilst holding down the left button. Releasing the button stops drawing, and also the program stops monitoring the mouse coordinates as the user is simply re-positioning the pointer: this is of no immediate use to us until the button is pressed again, to commence drawing. This way we know that if we are processing mouse movements we must draw something. How then do we code this? We could specify in the NewWindow structure that we always want to receive mouse movement information but this is rather wasteful and anyway we wanted to demonstrate the alternative which is far more cunning. Intuition has a function called ModifyIDCMP() which requires a pointer to a window and a new IDCMPFlags value as its arguments. Thus to start receiving details of mouse movements, we simply call the routine and OR the existing value with MOUSEMOVE. In practice, we used the macro IDCMPFLAGS, defined at the top of the program to simplify the code.

The global variable, mode, is used to signify whether the program is currently drawing or not. It is employed in the "rubber banding" part of the line-drawing code. The term "rubber banding" means that as long as the draw line gadget is selected (and hence the global DrawMode is set to FREELINE, another of my macros), we draw a line from the start point (set in the case MOUSEBUTTONS: part of the

doIDCMP() function), to the current position of the pointer, erasing the previous line (coordinates OldX, OldY) in the process. Most drawing programs use this method for allowing the user to see the effects of drawing a line before it is actually rendered for posterity.

MOUSEMOVE events will only be reported as a result of pressing the left button as explained above. Once an event of this class has been established, the program then has to decide which of two routines to call: one for simply plotting pixels and one for drawing lines. The code for this is fairly simple.

The CLOSEWINDOW has the unshakable duty of terminating the program, in the usual way of calling CloseStuff() before exit(). To digress briefly at this point, during the course of testing this program we discovered that the function Exit() - note capital 'E' from the dos.library, doesn't seem to release all the program's memory, about 96 bytes are "lost". Calling exit() with a small 'e' in the amiga.lib results in no loss at all. This may be trivial when you have half a million bytes, but we know VIC-20 programmers who would happily kill for 96 bytes. There again, VIC-20 programmers always were an odd bunch. We have no idea why the two functions are different, perhaps someone can enlighten us!

A GADGETUP event is signalled when the user selects one of the icons on screen. Note that you do not receive a message of this type when one of the system gadgets (depth arrangers, resize etc) is selected as Intuition deals with them itself, and uses different message classes to inform you.

The list of gadgets can get very long, very quickly so it is best to process them in a function of their own. Hence doGadgets(), which receives a pointer to a gadget structure as its only argument. Its sole local variable is a static UBYTE BigLittle which is used to keep track of the current size of the window.

The GadgetID field is easily accessed in the switch statement so we can determine which of the gadgets was selected and act accordingly. The

"To force Intuition to alter the highlighting, RefreshGadgets() is called."

"Stretch" gadget is the first to be tested, again using my macros defined at the top of the program. The functions MoveWindow() and SizeWindow() are self explanatory and we used yet more macros to actually set the new coordinates and size. This has the added benefit of being easy to modify before compiling, and also means that the code can be lifted out of this program for

use in another, which may have a different screen or size limits.

The next gadget is FREEDRAW, and this simply means "plot a pixel in the current colour at every location the pointer passes over as long as the left button is held down". It does this by setting the global DrawMode to FREEDRAW and alters the Flags field of the two draw Gadget structures to ensure that the appropriate icon is highlighted. The actual drawing routine is called in the doIDCMP() function when a MOUSEMOVE is reported. To force Intuition to alter the highlighting, RefreshGadgets() is called. Ideally, Intuition should do all this for us but this is not yet the case. Perhaps in version 1.5 we may be treated to such a luxury? The gadget FREELINE is handled in exactly the same way as FREEDRAW.

Lastly, the four colour gadgets are all handled together as all the selection means is setting the global DrawColour to be equal to the GadgetID. These GadgetIDs were carefully chosen to allow this!

The final two routines actually do the rendering, via calls to the ROM graphics routines. They are themselves called from way up in the MOUSEMOVE part of doIDCMP() and have the coordinates of the mouse as their arguments. These values are automatically made relative to the top left of the window by Intuition so all we must do is ensure that they do not write over any of the borders so the coordinates are compared to the Max and Min values of the window size before any rendering is done. Note that this would be unnecessary if we used a GIMMEZERO type of window but we did not mainly because it is awkward to type!

The last function, doLine() looks rather complex at first sight because of the "rubber banding" feature. This is implemented by keeping track of the previous line drawn and using the COMPLEMENT mode to both draw and erase it. This is important as it means that there is no trace of an erased line once the pointer has been moved around. The window border coding tends to complicate things slightly as the line gets erased once the pointer goes out of bounds. The static variable LineDrawn is necessary to prevent the function from drawing in incorrect lines when the pointer does go out of bounds. Note that the final line rendered for good is actually plotted in the function doIDCMP() when a message of class MOUSEBUTTONS, code SELECTUP is received - the user releases the button. It resets OldX and OldY to zero so the doLine() function does not erase it next time around the loop.

If you do have difficulty understanding the code, try drawing a flow chart!

You never know it may help. **M.N.**

continued from page 14

sents the logical operator OR. C programmers should be familiar with this system. For the rest of you the command reads: DIR *.asc OR txt OR s). Ok?

To round off this very cursory look at the features of the new system, consider the ARP Shell - ASH. For most purposes, ASH looks and feels exactly like the CBM Shell. But, there is a difference.

Type? at the prompt and ASH reveals its secret - the whole script language is built-in! That is, commands like IF, ENDIF, SKIP are already loaded. Also found here are EXECUTE and even ENDCLI. This means if you run a complex script from within ASH, it will execute much faster than you ever thought possible; plus, less disk accesses mean longer disk life.

I shall leave ARPDOS because this should be enough to show you just what you are missing. What are you waiting for? Get a copy and install it now! We will be covering this superb system much more in future - who needs to wait for Workbench 1.4 when you can have this power NOW. Unreservedly recommended.

M.S.

```
; Yes folks this is it. . .
; a complete 1.3 startup script for ARP
; brought to you by Mark Smiddy and Amiga User International
; ARPDOS courtesy of the Microsmiths
; a lot faster than Commodore's startup - take note CBM!
; delete the REMs for more speed

Addbuffers df0: 15
setpatch
System/FastMemFirst      ; move C00000 memory to last in list
resident CLI L:ASH
setclock opt load        ; if you have an RTC
FF -0 ;speed up Text
mkdir ram:t ram:env ram:clipboards
assign T: ram:t ENV: ram:env CLIPS: ram:clipboards
mount speak: aux: pipe: newcon:
System/SetMap gb          ; Good old CBM proggy
path ram: c: sys:utilities sys:system s: sys:prefs add
cd sys:
LoadWB delay              ; wait for inhibit to end before continuing
endcli >NIL;
```

SOFTWARE SELLOUT

**AMIGA/ATARI ST MEGA GAMES SALE
ONE MONTH ONLY
PRICES FROM £3.99**

Type of Computer

PLEASE SEND ME THE FOLLOWING ITEMS:

ITEM	AMOUNT
POST+PACKING	
TOTAL	

Name: _____

Address: _____

Telephone _____

ALL PRICES INC VAT + POSTAGE
WITHIN UK MAINLAND

ALL GOODS SUBJECT TO AVAILABILITY (PRICES
CORRECT AT TIME OF GOING TO PRESS).

CHEQUES AND POSTAL ORDERS MADE PAYABLE
TO:-

SABRE COMPUTER DISCOUNT CENTRE,
UNITS 74/75, INSHOPS, 68-74 CHURCH STREET,
CROYDON, SURREY CR0 1RB

RING FOR DETAILS ON

01 760 0274

OR VISIT OUR SHOP AT:

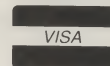
UNIT 74/75 INSHOPS,

68-74 CHURCH STREET,

CROYDON, SURREY CR0 1RB



ASHCOM

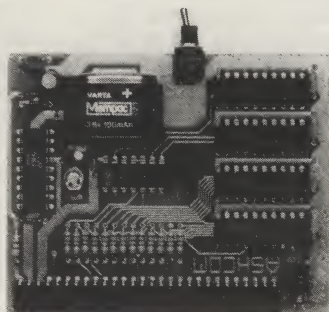


SPECIAL OFFER
£12 OFF LISTED PRICE
WHEN YOU RETURN THIS
ADVERT WITH YOUR
CHEQUE OR POSTAL
ORDER

Original ASHCOM
 RAM Expansion

ONLY
£89.95

(Limited Stock)



PLEASE MAKE CHEQUES &
 P.O.s PAYABLE TO ASHCOM

All prices include
 VAT and Delivery.

British made
 Trade Enquiries Welcome

0530 411485

512K RAM Expansion
with Clock
for Amiga 500

Features:

- ★ RealTime Clock with High Capacity
NICAD Battery Backup
- ★ Memory Disable Switch
- ★ Low Power Consumption
- ★ Latest Technology 1MBit RAMS
- ★ Low Chip Count for High Reliability
- ★ Direct Replacement for A501 Expansion

ONLY
£99.95

44C 256 – 12
DYNAMIC RAMS,
£15 INC VAT
EACH

Only from ASHCOM, 10 The Green, Asby-De-La-Zouch, Leicestershire, LE6 5JU
Telephone: (0530) 411485

SEVENTEEN BIT SOFTWARE

“That bit better than the rest”

AMIGA PD SOFTWARE

THE AMIGA USER PD PACK!!

Four great PD discs, Utility disc, Music
 disc, Graphics disc and Animations disc
 plus the latest issue of our disc-magazine.
 All this for only £10 inclusive of postage
 and packaging plus!

FREE membership to 17Bit!!
Amazing value for money!

THE QUICKSTART III PD PACK!

This highly successful pack is still
 available for the amazing price of
 just £5! Includes a great utility disc,
 complete with 3 games and a fantastic
 disc full of music and demos! Also the
 latest of our disc-mag and Free
 membership!

NEWSFLASH! ... NEWSFLASH! ... NEWSFLASH! ... NEWSFLASH! ... NEWSFLASH!

Write for details of a brand-new disc magazine produced by ourselves and UGA of Holland,
 which should mean great things for the European PD scene!

NOTES: All packs work fine on 1.2/1.3 Amigas and in 512K. All are guaranteed virus free and Virus X3.2 is included on the disc magazine itself.
 Orders can be placed over the phone with Access/Visa 24 Hours a day. (Answer phone after 5.30pm). A full catalogue of all 17Bit discs
 (including all new releases) is available for £2 and is on disc-format. The 17Bit range now goes up to 430+!!

SEVENTEEN BIT SOFTWARE

PO BOX 97

1st Floor 2-8 Market Street, Wakefield WF1 1XX
Telephone 0924 366982 (24 Hours)

RED LIGHTNING

SSI

RED LIGHTNING is the latest offering from Strategic Simulations Inc. and is, yet another program that depicts the potential scenario of World War III, fought in Central Europe. The title refers to the author's description of the speed and destructive power attributed to the Soviet land and air forces.

SSI are well known for their attention to detail and Red Lightning is no exception. The amount of data contained in the manual is mind-boggling, with facts and figures for just about every type of weapon system, aircraft and ground unit catered for and documented. The appendices even contain all the formulae that the program uses to calculate the results of each individual conflict, both on the ground and in the air.



Gameplay takes place on the main map screen, which shows the positions of all known units of both sides. Each unit is depicted as an Icon, which represents the unit type (Infantry, Armoured, HQ etc.) at both Brigade and Division level, with every individual vehicle and weapon being taken into account when calculating a unit's strength. Before the game starts, you can choose from three different scenarios and five difficulty levels, plus a host of other factors that will effect the way your forces (and your opponent's forces) will react in any situation. The options include chemical weapon use, the time of year, North Atlantic and Special Operations. Air campaigns and intelligence levels, plus one or two others.

The Info menu gives you a series of full reports on everything from Political inclinations to the weath-

er report, whilst the General menu contains the options to end or quit the game. The third menu, Orders, is the most important, as this is where you initiate future operations for your Air, Marine and Special forces start the movement phase. Even here, the level of data that is taken into account is quite astonishing. Each unit is issued with a number of movement "points" per turn that are used up as the unit moves. The rate at which this occurs is governed not only by the type and efficiency of the unit, but also by the terrain, weather, time of day and season!

When both sides have completed all movement orders, the game goes into the Combat Phase to resolve all air and ground conflicts. Air combat consists of Air Superiority.

The game allows for one or two players, with the computer taking the opposite side in a single player game. As the NATO Commander, your task is to repel the advancing Warsaw Pact forces whilst maintaining the NATO Alliance, which faces ever-increasing pressures as time ticks by. As the head of the Soviet Army, all you have to do is sweep aside the NATO forces and capture the Ruhr. To achieve your individual aims, you must control your armies and make the moves and decisions that a real Commander might have to face if WW III should ever occur.

At the end of the Combat Phase, the computer will run a series of checks that will assess the overall position of both sides and make any amendments necessary to each. The computer then tests to see if either alliance has collapsed, or the final turn of a scenario has been reached. If so, the game ends and victory is awarded. Scenarios may be short (20 turns/10 days), or long (60 turns/30 days) and victory is determined solely by relative alliance morale levels.

The game is supplied on a single disk. Along with the very comprehensive instruction booklet, a map of the area covered by the game is supplied.

I found Red Lightning to be one of the finest programs of its type. Although Red Lightning will never sell as many copies as the more popular arcade-type game, I'm sure that, in computer-wargaming circles, it will quickly become established as a firm favourite.

N.S.

Graphics: 6 Sound: N/A Playability: 8
ABSOLUTE VALUE: 8 Price: £24.95

RETAIL)

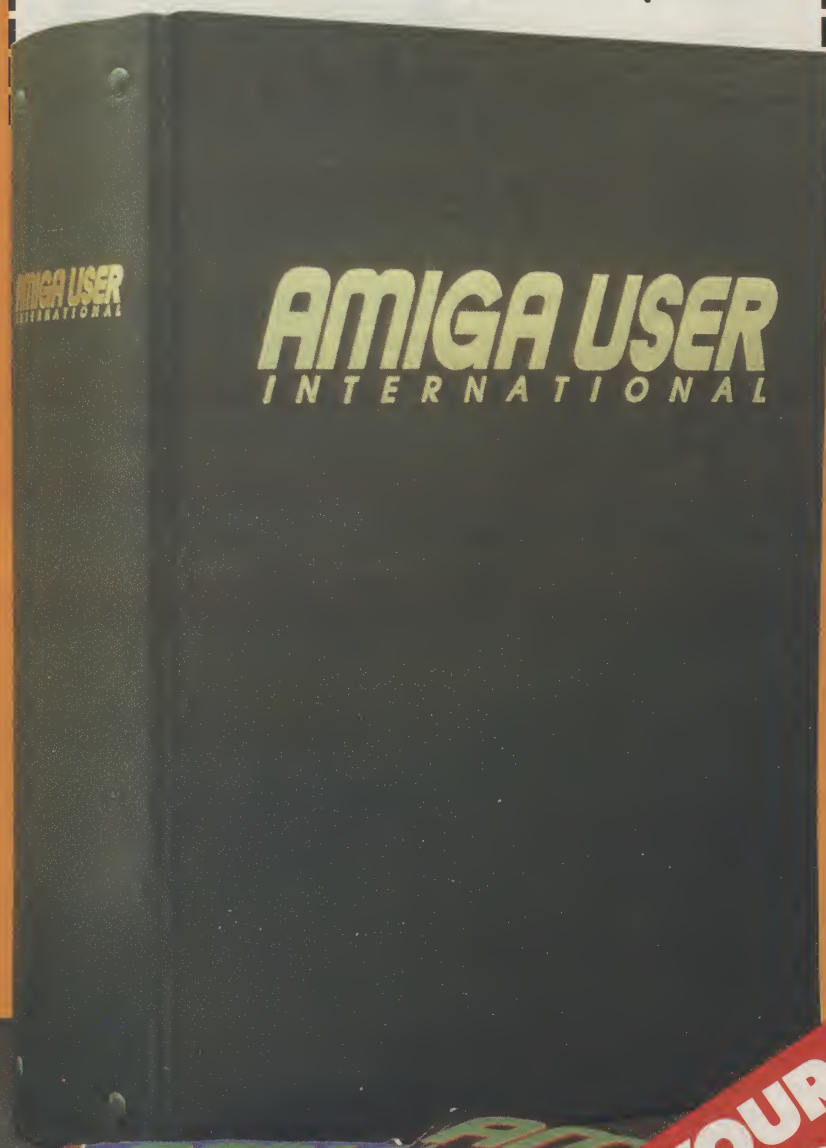
ARCHIVE YOUR AUI COLLECTION

Enhance your Amiga User International Magazine collection now for only £5.95 (inc. postage and packing). *Send for one today! The AUI binders also make an ideal gift for other Amiga users too!*

[illegible]

Tel No.

PHOTOCOPIES
OF THIS COUPON
WELCOMED!



**ARCHIVE YOUR
AUI COLLECTION**

Model Building for a Relational Data-base (part II)

The Amiga has several 'heavyweight' database programs which are quite capable of serious use. Using packages like Acquisition and Professional DataRetrieve to their full potential needs some careful planning... this month we see how the 'logical models' developed in the October AUI might be translated into a real database definition

Last month we took a fairly simple applications example and identified a collection of entities and attributes. By analysing and re-arranging the various items we ended up producing a set of entity descriptions which had certain desirable properties - they were free of repeating groups, the attributes present in the descriptions were dependent on the whole of the identifying field/s, and the secondary, i.e. the non-identifying attributes, were mutually independent. The database 'buffs' say that entity descriptions with these properties are in 3rd Normal Form.

Is this 3NF criteria sufficient? For 99% of cases the answer is a most definite YES, but there are occasions when other dependencies need to be recognized and dealt with. Fourth and fifth normal forms do exist but their use is not widespread and there's even disagreement about their usefulness - basically the 3NF form is sufficient to remove most of the problems that could occur in the file structure.

However far you take the analysis the result is the same - a logical picture

of the necessary requirements is obtained in a way which is totally independent of any particular database management system. It's the equivalent

of a flowchart for a computer program only instead of giving you step by step instructions it gives you a plan of the data items, their characteristics and the relationships which exist between them.

Flat Files

Before we talk about some of the Amiga's Database programs there's one point that should be made. Once a logical model has been developed you could actually implement it in any way which would provide the necessary file links. Consider, for instance, this entity description...

MAILSHOT (mailshot#, mailshot-date)

This could be represented as a conventional computer file (often called a

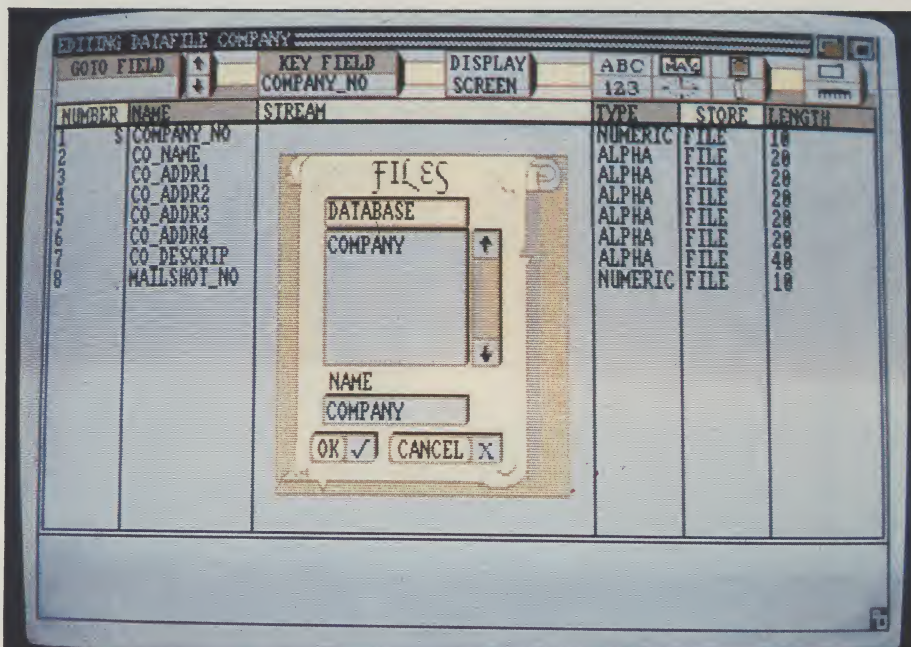
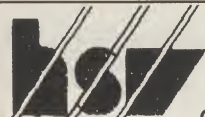


Figure 1.

continued on page 118



HSV COMPUTER SERVICES LIMITED

23, Hampstead House, Town Centre, Basingstoke, Hants, RG21 1LG

3 1/2" DS/DD Disks Bulk — Fully Guaranteed

10	20	30	40	50	100
7.95	15.50	22.50	29.50	35.50	69.95

Lookable Disk Boxes

50 × 3 1/2	£5.95
100 × 3 1/2	£7.95

Accessories

3 1/2" Cleaning Kit	£4.95
Amiga 500 Dust Cover	£4.95
Amiga 100 Dust Cover	£9.50
Mouse Mat (Foam)	£5.95

Stationery ... Stationery ... Stationery ...

	500	1,000	2,000
9.5" × 11" 60gsm Micro-Perf all edges	—	£9.50	£15.95
True A4 70gsm Micro-Perf all edges	£8.50	£12.95	£23.95
True A4 90gsm Micro-Perf all edges	£9.75	£14.95	£27.95
True A4 100gsm Micro-Perf all edges (coloured — Cream, Blue, Grey or White)	£16.95	£31.95	—

	1,000	2,000	4,000
Labels 3.5" × 1.5" (1 across)	£5.25	£9.50	£17.95
Labels 3.5" × 1.5" (2 across)	£5.75	£10.50	£19.95
Labels 4.0" × 1.5" (1 across)	£5.75	£10.50	£19.95
Labels 4.0" × 1.5" (2 across)	£6.75	£11.95	£22.95
Labels 2.75" × 1.5" (3 across)	£4.75	£8.50	£15.95

Credit Card Hotline

(0256) 463507

Faxline

(0256) 841018



Orders under £8 in value carry a small order charge of £2

GET LOST

IN THE WORLD OF CREATIVE COMPUTING AT SABRETECH THE SOUTH'S PREMIER COMPUTER MUSIC CENTRE!!! (WE ALSO STOCK A LARGE SELECTION OF THE LATEST GRAPHICS, UTILITY AND GAMES SOFTWARE ALL AT COMPETITIVE PRICES!)

PHONE OUR HOT LINE ON 01 760 0274



HARDWARE	RRP	SABRE	MUSIC SOFTWARE	RRP	SABRE
A500	399.99	365.00	ADRM	39.95	32.50
A500 INC 512K MEMORY			AEGIS AUDIOMASTER II	69.95	56.50
EXPANSION CARD	529.00	460.00	AEGIS SONIX II	57.50	46.50
A500 INC COLOUR			DELUXE MUSIC	69.95	56.50
PROFESSIONAL MUSIC PACK		RING	DR3 KCS	199.95	162.50
STEREO MONITOR	699.98	599.99	DYNAMIC DRUMS	59.95	42.50
20 MEG HARD DISK			DYNAMIC STUDIO	69.95	59.99
(COMMODORE A590)	399.99	359.00	FUTURE SOUND	89.95	84.50
3.5 DISK DRIVE			INSTANT MUSIC	24.95	19.99
(HIGH QUALITY ON/OFF/PORT)	119.99	89.99	MUSIC X	228.85	189.99
A500 BATMAN PACK		365.00	PRO SOUND DESIGNER	79.95	71.50
MIDI INTERFACES FROM		24.99	SOUNDScape PRO MIDI STUDIO	139.95	106.50
NULL MODEM CABLES FROM (Sizes to order)		14.99	SYNTHIA	79.95	75.00
			STUDIO MAGIC	69.95	59.95
			MUSIC PUBLIC DOMAIN DISKS (MIDI/SAMPLES ETC)		3.00

COMPUTER MUSIC HARDWARE

ROLAND	RRP	SABRE	CASIO	RRP	SABRE
CM-64 MULTI-TIMBRAL SOUNDMODULE	789.00	699.99	PT-10 MICRO MINI KEYBOARD	24.95	19.99
CM-32L AS ABOVE	369.00	329.99	MT 640 MINI KEYBOARD	189.95	169.95
CM-32P AS ABOVE	445.00	399.99	MT 740 MINI KEYBOARD	199.95	179.95
CF-10 MIDI MIXING CONTROLLER	129.00	115.99	HT 3000 PROGRAMMABLE KEYBOARD	289.00	249.00
MA-12C MONITOR SPEAKER (12 WATTS)	105.00	89.99	HT 6000 PROGRAMMABLE KEYBOARD	649.00	599.00
CM-64/32P SOUND LIBRARY CARDS	45.00	39.99	CSM 1 SOUND MODULE	199.95	149.95
CHEETAH			CSM10P SOUND MODULE	249.00	199.95
MK5 MIDI MASTER KEYBOARD	149.95	135.99	DH 100 DIGITAL HORN	99.95	79.95
MK5V MIDI MASTER KEYBOARD	274.95	239.99	DH 800 DIGITAL HORN	129.95	99.95
MD16 16 BIT DIGITAL DRUM MACHINE	299.95	264.99	DH 500 DIGITAL HORN	199.95	179.95
DP5 ELECTRONIC POWER PLAY DRUM KIT	174.95	154.99			
MS6 MULTI-TIMBRAL SOUND MODULE	299.95	264.99			

Type of Computer
PLEASE SEND ME THE FOLLOWING ITEMS:
ITEM AMOUNT

POST+PACKING

TOTAL

Name:

Address:

Telephone

ALL PRICES INC VAT + POSTAGE WITHIN UK MAINLAND
ALL GOODS SUBJECT TO AVAILABILITY (PRICES CORRECT AT TIME OF
GOING TO PRESS). CHEQUES AND POSTAL ORDERS MADE PAYABLE TO:
SABRE COMPUTER DISCOUNT CENTRE, UNITS 74/75, INSHOPS, 68-74
CHURCH STREET, CROYDON, SURREY CR0 1RB

AMIGA A500

SPECIAL OFFER
HIGH QUALITY

512 k EXPANSIONS

INCLUDES: BATTERY BACKED CLOCK,
ON/OFF SWITCH, 5 1MEG P.D. DISKS:
POCKET CALCULATOR, VAT, POSTAGE,
FOR ONLY £109.99

SEPTEMBER STAR DEALS

A500 INC ... MOUSE, PSU MANUALS, CABLES, TV
MODULATOR, JOYSTOCK, 5 PUBLIC DOMAIN
DISKS, 5 BLANK DISKS, DISK BOX, 4 GAMES AND
CASIO KEYBOARDS.

ONLY 399.99

MUSIC X
£179.99

"IF IN DOUBT CHECK US OUT" ... WE ARE OPEN MON-SAT 9.00AM TO 5.30PM.

continued from page 116

'flat file'), such as are available from AmigaBASIC, C and other high level languages. In BASIC the above definition could translate into this type of form....

```
OPEN "R",1,"MAILSHOT",10
```

```
FIELD #1 4 AS mailshot-number$, 6 as  
mailshot-date$
```

The entities become random access files, and the attributes become fields within records. Indexing on the appropriate field gives you access to a record via the chosen key! Creating relationships between files is a bit harder... you'd need to use sets of pointers embedded in the file definitions. Whilst you can use ordinary files to implement these types of models it's rather easier (in fact it is an awful lot easier) to use a piece of software which has been especially designed for the process - and that means using an database management system. These offer the means of creating the files in the first place, the means of linking them together, provide the means of offering different users alternative views of the data and allow sophisticated searching and reporting facilities.

The Amiga has three such heavyweight database programs: *Superbase Professional* from Precision Software, *Acquisition* from Taurus Impex, and *Professional DataRetrieve* from Abacus. They are all relatively expensive, allow many files to be open simultaneously, support complex file searching, and allow applications programming to be carried out using 'BASIC-like' high level development languages. Superbase Professional is probably the most widely used - it is a stable, useful and well supported package although it does not have the relational 'flavour' which the other two heavyweights possess.

"Once the files have been created, links are then introduced between fields from various files."

Acquisition is potentially a powerful Amiga RDBMS orientated package, well suited to implementing the type of logical models which normalization produces. Unfortunately some problems with the early releases, language bugs, no proper tutorial matter etc., gave it a less than ideal start. A revision (release 1.3F), together with extra tutorial material, was provided in order to clear up some acknowledged problems. Part of the early difficulties stemmed from the fact that many users simply did not know how to set up the package to best effect, so the benefits of a package which supported a relational approach were lost. To be perfectly honest I don't use Acquisition regularly

and I am not able to say for sure whether all of Acquisition's earlier problems have been ironed out!

Professional DataRetrieve surprised us all at *AUI* - we knew of no-one using it and when we asked around many retailers seemed to confuse it with the less sophisticated ordinary 'DataRetrieve' program. On first use Professional DataRetrieve seemed less powerful than its competitors. In actual fact it has now become my favourite package and other than a few minor bugs which have come to light with the program editor the program behaves brilliantly. The

tions lead to a set of default master record layouts being defined. Figures 1 and 2 show screenshots of some of Acquisition's creating/bridging displays - it is very well integrated into the Intuition environment and, after a little practice, both creating and bridging modules become straightforward to use. Acquisition uses a 'Pasting' module which allows you to create a particular view of the data and it is this module that produces the display and logical 'front end' which a particular user sees.

Professional DataRetrieve uses a similar approach with individual data-

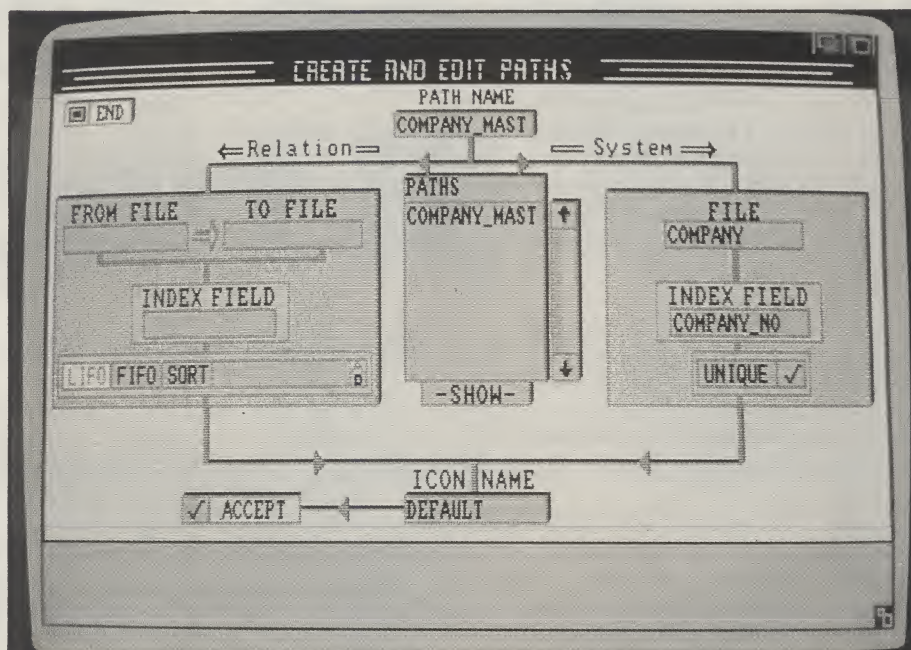


Figure 2.

PROFIL programming language included with Professional DataRetrieve is very nicely structured although, like all such languages, there are a few peculiarities to contend with.

For the implementation of our model, most of the hard work has been done already as far as our example goes. We have got the entity descriptions and all we need do is translate them into equivalent database files. I shall deal with Acquisition first because it is best suited to explaining some of the general RDBMS ideas.

What we are attempting to do is duplicate our logical model as a series of database files. We create a database for each entity and for each file we include a set of record fields based on our attribute lists. During this initial definition period we define the field which will be the primary identifying field, i.e. the key field. Once the files have been created, links are then introduced between fields from various files.

Acquisition provides a 'Creating' module for preparing the file definitions and a 'Bridging' module for producing links between databases. The result is a file structure that, if you have it right, will mirror the logical model. Initial defini-

base files set up to correspond to each entity description (Figure 3 shows a typical file creation screen). Like Acquisition the initial definitions produce a set of master files but file links and the final views which a user would see are produced in a slightly different way: Professional DataRetrieve is a 'mask orientated' relational database. You

"Within 15 minutes or so that user has another view of the data especially tailored to what he or she wanted."

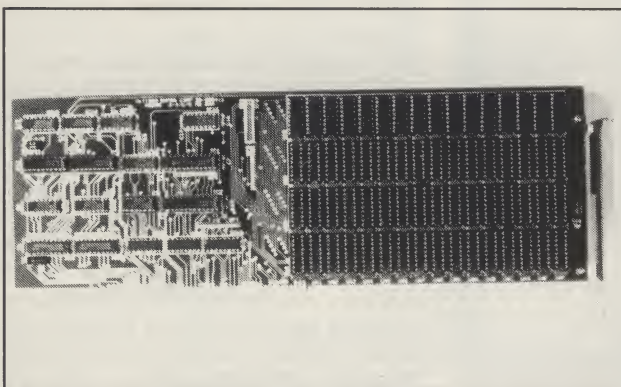
can get the full details from *AUI*'s review (May 89) but in short you build screen, list and printer 'masks', which can pull in data from the fields of any defined databases - figure 4 shows a couple of example screen masks. Links are produced by creating indexes and then using these indexes during the setting up of the mask definitions.

I have been talking about masks and logical views, so let us give you an example of the sort of flexibility a RDBMS could offer: Imagine that this

continued on page 120

Beef Up Your AMIGA System

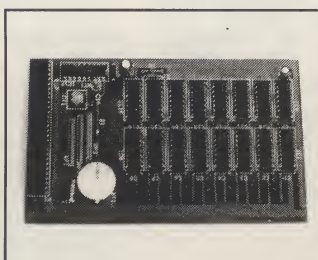
★ RAM Expansion ★ **SupraRam 2000**



- 2, 4, 6 and 8MB configurations available
 - Lets you run larger and more sophisticated programs
 - Installs easily into any AMIGA internal expansion slot
 - Allows creation of large and very fast RAM disks
 - Easy to expand from initial configuration - start with 2MB and add RAM at your convenience
 - One Year Guarantee
- | | |
|-----|---------|
| 2MB | £399.95 |
| 4MB | £599.95 |
| 6MB | £799.95 |
| 8MB | £999.95 |
- 6MB configuration allows maximum benefit from AMIGA bridgeboard

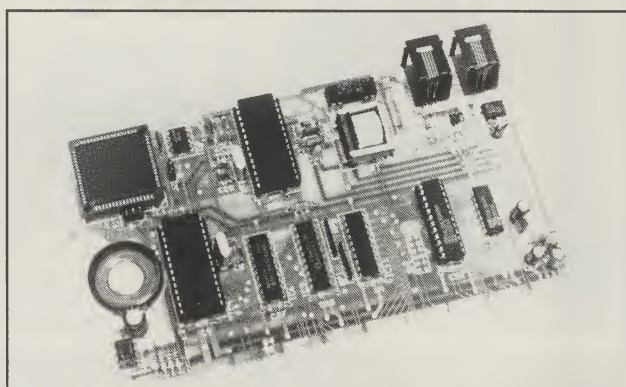
SupraRam 500

- 1/2MB RAM board increases A500 RAM to 1MB
- Built-in battery backed clock/calendar
- Easy installation - simply plugs into memory slot on underside of A500



Only £99.95

★ Communication ★ **SupraModem 2400**



- Works with all AMIGA 2000 computers
- 100% Hayes compatible
- Half card fits any AMIGA bus slot
- Asynchronous 2400/1200/300 baud operation
- Supports up to 5 modems per AMIGA 2000
- Fully CCITT compatible
- Works with most commercial telecommunications software
- Auto answer/auto dial
- Adjustable volume speaker
- One year guarantee

PROHIBITED from direct or indirect connection to public telecommunication systems. Action may be taken against anyone so connecting this apparatus.

2400zi £169.95
External 2400 £169.95
(Works with any system)

- All prices include VAT and delivery

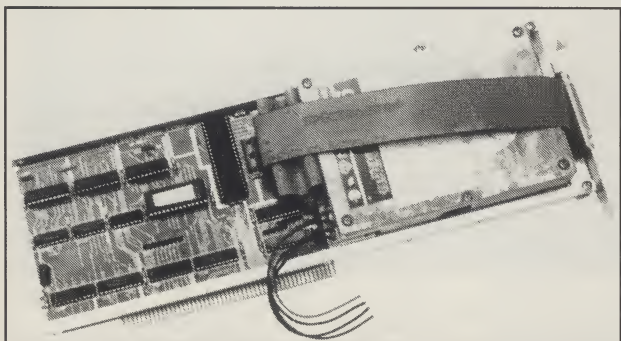


Frontier Software

- Frontier Software are Supra Corp's only official UK distributor

P.O. Box 113, Harrogate,
North Yorkshire HG2 0BE.
(0423) 567140/530577.
Fax (0423) 522874.

SupraDrive



Hard Disks



- Easy to install 30 or 45MB hard drive with suitable interface (2000 internal)
 - Compatible with Workbench 1.3 auto booting and fast file system
 - WordSync (2000) or expansion port (500) SCSI interfaces available separately
 - Twelve month guarantee
 - WordSync interface transfers 16 bits at once, giving DMA speed without DMA hassle
 - WordSync interface offers super smooth sound, video etc with no interruptions for disk access
- | | |
|--|---------|
| 30MB AMIGA 500 SupraDrive | £599.95 |
| 45MB AMIGA 500 SupraDrive (with Expansion Port interface) | £699.95 |
| 30MB AMIGA 2000 SupraDrive | £549.95 |
| 45MB AMIGA 2000 SupraDrive (with WordSync Interface) | £649.95 |
| A2000 WordSync Interface (Just add any SCSI Hard Disk) | £189.95 |
| A500 Expansion Port Interface (Just add any SCSI Hard Disk, Power Supply and Case) | £189.95 |

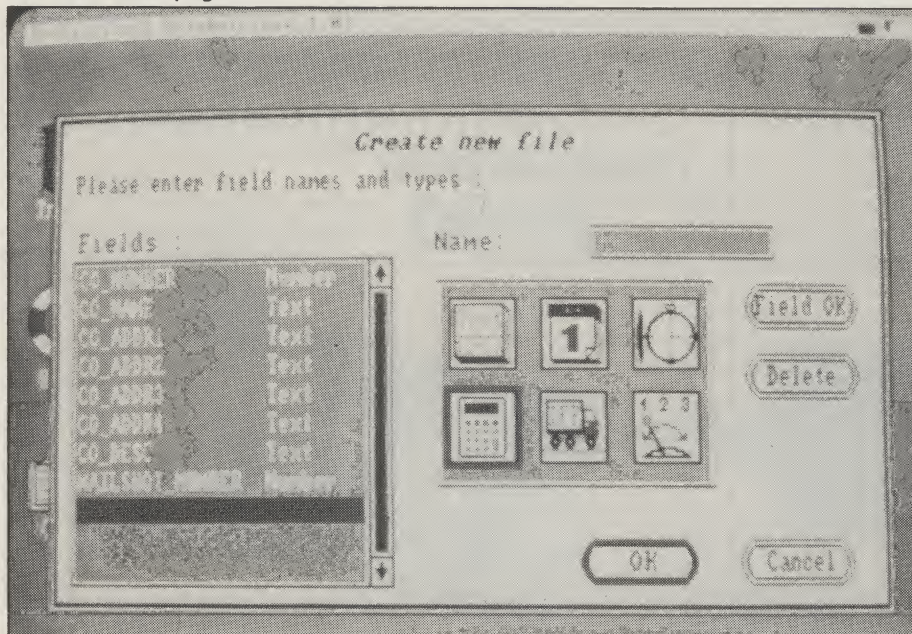


Figure 3.

example database is up and running when someone comes up and says something like this.....

"My VDU terminal is always on during the day, would it be possible for me to access the database so that when a service company phones me I could, by typing in the Company's name, get an 'up to the minute' display of available contacts, just in case our printed list has changed since the last time it was printed?"

This is an easy one..... with Professional DataRetrieve (for example) you would simply select the 'Edit Screen Mask' option, bring in the Company-Name field from the Company database, and then bring in the name, address and telephone number fields from the Contacts database. Within 15 minutes or so that user has another view of the data especially tailored to what he or she wanted. It does not matter that other users will be making different use of the data, nor does it matter to the existing users that a new use has been found for the data.

That sort of partial use of existing data is relatively straightforward but supposing someone now comes along and makes this suggestion...

"Having mailshot number and mail-shot date is all very well for most of the office staff, but I deal with the mailshot queries and when someone phones up to discuss something I've got the reference numbers but no details as to what they refer to - I have to go over to the filing cabinet to physically get out the corresponding mailshot text. Why can't we have the mailshot text data stored in the database as well?"

Go back to last month's article and have a look at the very first entity description, the one for COMPANY before we translated it into 3NF form. Imagine it implemented as a flat file arrangement

and ask yourself how easy it would be to re-program that file description as it stands - knowing that the file already contains data and would (because of

"Because we produced a clean model an extra field can easily be added, the user who wanted his mailshot data 'on-line' gets the extra fields and a mask/view which lets him use it."

repeating groups) contain variable length records which would need to be accessed randomly. Take it from me it would not be easy!

Now look at our final MAILSHOT

entity. It's a much simpler arrangement - all of the fields are cleanly related to the identifying (key) field and you could almost imagine just tagging an extra field on the end of the description. That is essentially what an RDBMS system is able to do but it does it in a way which does not interfere with existing applications. Because we produced a clean model an extra field can easily be added, the user who wanted his mail-shot data 'on-line' gets the extra fields and a mask/view which lets him use it, and the rest of the users continue using their applications programs seeing just mailshot-number and mailshot-date items just as before - perhaps not even aware that any changes had been made to the underlying database structure.

That then is the real power of the RDMS and relational database methodology..... it offers a means of producing a model and therefore a database file structure that is easily modified, and at the same time allows different users to view and use the overall database in any number of independent ways.

What sort of problems will you encounter? You will find that ALL RDBMS systems have limitations on the models which they can handle. Programs like Acquisition and Professional DataRetrieve cannot implement relations on concatenated (multiple) key fields, and so record definitions like COMPANY-CONTACT would need to be revised - sometimes (as would be the case for our example) it is possible to accept a slightly modified form, other times you can use multiple field calculations to automatically handle the calculation of a single key. Most of the time you are best off just accepting any limitations..... because even with a RDBMS system that has a few constraints your final database will still be far more flexible than almost any alternative database arrangement!

S.M.

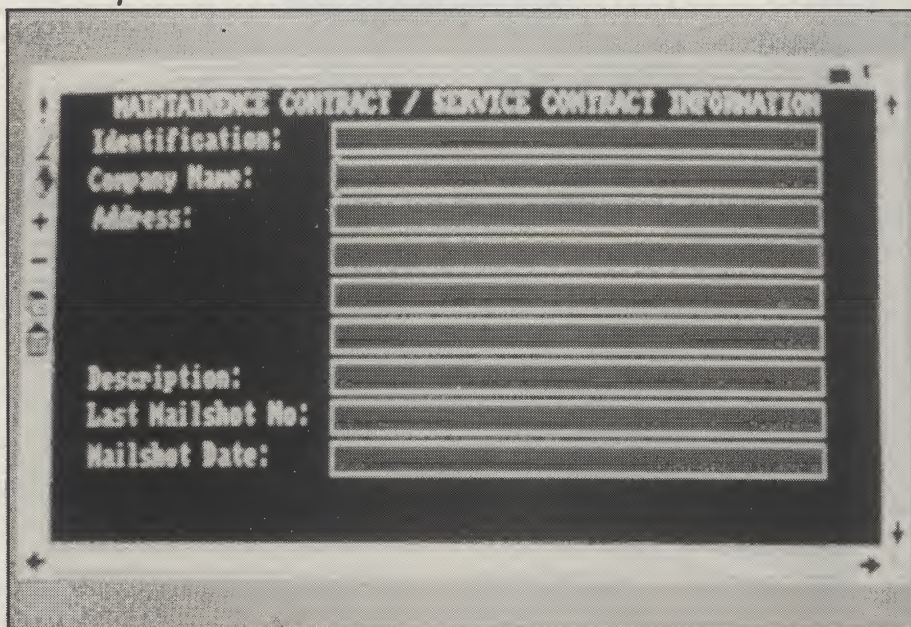


Figure 4.



PHONE
0603-812416

HAMMERSOFT

AMIGA MAIL ORDER SPECIALIST

PHONE
0603-812416

VISA

AMIGA A500 + TV MODULATOR ONLY £365.00 inc VAT

BEST SELLERS

BARBARIAN II	17.90
BATMAN THE MOVIE	17.90
BLOOD MONEY	16.90
BLOODWYCH	17.90
DRAGON NINJA	17.90
DRAGONS LAIR	34.98
DUNGEON MASTER	17.90
F-16 COMBAT PILOT	17.90
FLIGHT SIM II	26.90
FORGOTTEN WORLDS	15.90
KICK-OFF	13.90
LORDS OF THE RISING SUN	21.50
MILLENNIUM 2.2	18.90
NEW ZEALAND STORY	17.90
POPULOUS	17.90
PROMISED LANDS	8.99
POWERDROME	17.90
ROBOCOP	17.90
RVF HONDA	17.90
SHADOW OF THE BEAST + T-SHIRT	24.90
SHINOBI	14.90
SPACE HARRIER	13.90
SUPER HANG ON	18.90
SWORD OF SODAN	16.90
XENON II MEGABLAST	17.90
XYBOTS	15.90

QUALITY JOYSTICKS

Cheetah Mach I	13.50
Comp Pro 5000	13.50
Comp Pro Extra (clear)	14.90
4 Player Adaptor	4.99

STAR LC10 COLOUR PRINTER ONLY £209

SPECIAL OFFERS (while stocks last)

Backlash	9.99
Better Dead Than Alien	11.99
Bermuda Project	11.99
Crash Garrett	9.99
Custodian	9.99
ECO	11.99
Helibent	9.99
Heroes of the Lance	16.99
Major Motion	9.99
Manhattan Dealers	11.99
Marble Madness	9.99
Mercenary	9.99
Nebulus	9.99
Netherworld	9.99
Pandora	9.99
Phantom Fighter	12.99
Platoon	14.99
Powerplay	12.99
Sky Chase	9.99
Whirligig	11.99
Zynaps	9.99

LEISURE

3D POOL	16.90
BATTLE CHESS	17.90
BATMAN	17.90
CASTLE WARRIOR	16.90
Denaris	15.50
Double Dragon	13.90
Elite	16.90
Garrison I or II	18.90
Quantlet II	18.90
GUNSHIP	17.90
HYBRIS	16.90
INDIANA JONES LAST CRUSADE	14.90
LICENCE TO KILL	14.90
Light Force Pack	17.90
MENACE	13.90
MICROPROSE SOCCER	16.90
OPERATION WOLF	17.90
Outrun	9.99
PACMANIA	13.90
PAPERBOY	14.90
PRECIOUS METAL COLLECTION	17.90
RICK DANGEROUS	17.90
R-TYPE	18.90
ROBOCOP	17.90
Rocket Ranger	21.50
S.E.U.C.K.	21.50
SILKWORM	17.90

Speedball	17.90
Starglider II	16.90
Stryx	14.99
STRIDER	14.90
Superman	15.49
TARGHAN	16.90
Test Drive II (The Duel)	17.90
TRIAD II	17.90
UNTOUCHABLES	17.90
Vigilante	14.90

ADVENTURE & SIMULATION

BALANCE OF POWER 1990	16.90
Bards Tale II	17.90
BATTLE CHESS	17.90
Battlehawks 1942	18.90
CARRIER COMMAND	16.90
Colossus Chess X	17.90
Conflict in Europe	17.90
DUNGEON MASTER (1 MEG)	17.90
Faery Tale Adventure	17.90
F-16 COMBAT PILOT	16.90
F-16 FALCON	21.50
Federation of Free Traders	21.50
FALCON MISSION DISK	14.90
Flight Sim II or JET	26.90
Scenery 7 or 11	16.90
Japan or Europe	13.90
INTERCEPTOR	17.90
JOURNEY	21.50
KEEP THE THIEF	17.90
Knight Orc	13.50
Kristal	19.90
Kingdom of England	16.90
LEADERBOARD BIRDIE	18.50
QUEST FOR THE TIME BIRD	21.50
Scrabble Deluxe	13.90
SWORDS OF TWILIGHT	17.90
UNIVERSAL MILITARY SIM	16.90

GRAPHICS & MUSIC

Videoscape 3D 2.0 (PAL)(1MB)	124.00
Deluxe Paint II (PAL)	49.90
DELUXE PAINT III (PAL)(1MB)	61.90
Digipaint III (PAL)	61.90
DIGIVIEW GOLD (PAL)	132.00
Fantavision (PAL)	35.00
PHOTON PAINT (PAL)	48.00
PHOTON PAINT II (PAL)	75.90
SCULPT 3D XL (PAL)	119.00
Sculpt 3D animate (PAL)(1MB)	99.90
TV Show (PAL)(1MB)	69.90

AMIGA A500 + 1084S STEREO MONITOR ONLY £619

TV Text (PAL)	69.90
Aegis Video Titrer (PAL)	84.00
Aegis Sonix 2.0	49.90
Deluxe Music	51.90
D.Music Rock n Roll disk	9.50
FutureSound Digitizer	75.00
Music X	179.95
Midi Master Interface	32.95

BUSINESS

Kindwords	42.00
Excellence!	159.95
PROTEXT	69.00
PAGESETTER	65.00
Professional Page (1MEG)	199.00
Publishers Choice	79.00
Word Perfect	179.00

HARDWARE U.K. ONLY

AMIGA A500 & MODULATOR	365.00
As above with 5 games	385.00
AMIGA A500 & 1084S MONITOR	619.00
A501 1/2 MEG EXPANSION/CLOCK	135.00
CEW 1/2 MEG EXPANSION/CLOCK	119.00
CUMANA 3.5" 1 MEG DRIVE	97.50
SENATOR 3.5" 1 MEG DRIVE	97.50
STAR LC-10 PRINTER	159.00
STAR LC-10 COLOUR PRINTER	209.00
STAR24 PIN PRINTER	259.00
MINIGEN LOCK	105.00
BRANDED DISKS 10 inc Labels	11.95

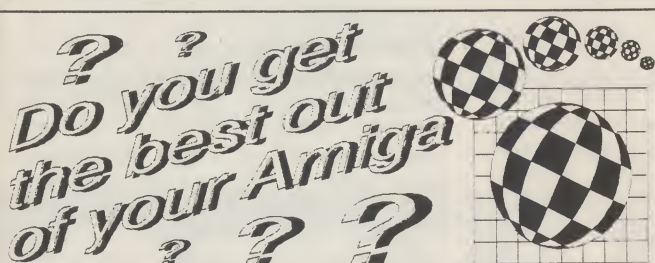
CUMANA EXTERNAL (SWITCHABLE) DISK DRIVE ONLY £97.50

PLEASE SEND CHEQUES/POSTAL ORDERS TO:
HAMMERSOFT, DEPT A, 47 MILL ROAD,
HETHERSET, NORWICH,
NORFOLK NR9 3DS

MORE TITLES AVAILABLE ON REQUEST
ORDERS/ENQUIRIES: PHONE (0603) 812416

* = AVAILABLE ON RELEASE
PRICES ALL INCLUDE VAT & 1st CLASS
POSTAGE IN U.K. (EUROPE PLEASE ADD £2.00
PER ITEM)

RETURN OF POST SERVICE ON STOCK ITEMS



Amiga Amiga Amiga Amiga Amiga Amiga

The U.K. Amiga Users Group is the Largest Amiga only user group in the world. We are now in our fourth year and are the most established and experienced Amiga user group in the U.K. We have over 1,500 members and are able to offer an unrivalled level of support. Our members receive a 60+ page bi-monthly newsletter packed with articles of interest at all levels, we have a massive library of public domain software and run an Amiga only bulletin board. We offer our members superb discounts on all hardware, software and books. The U.K.A.U.G. is the group to belong to regardless of your age or level of experience, our aim being to provide support and encouragement to everyone. Why not join us and start to appreciate what Amiga computing is all about.

For more info,
send a stamped
addressed envelope...
or telephone...
The U.K. Amiga User Group
66 London Road
LEICESTER LE2 0QD
(0533) 550993

OFFICIAL COMMODORE AMIGA DEALER

COMPUTERS (ONLY UK MODELS)

B2000 + 1084S + XT BRIDGEBOARD + 20Mb HARD DRIVE	1399.00
Amiga B2000 only	PHONE
Amiga B2000 + Colour Monitor	PHONE
Amiga B2000 + XT Bridge + 20Mb PC Drive	1209.00
Amiga B2000 + Colour Monitor + XT Bridge	1219.00
Amiga B2000 + XT Bridge	1029.00
Amiga 2088 PC/XT Bridgeboard + 5.25" Drive inc MS-DOS	249.00
Amiga 2088 Bridge + 5.25" Drive + 20Mb Drive inc MS-DOS	429.00
Amiga 2286 PC/AT Bridgeboard + 5.25" Drive	769.35
Amiga 500 NEW PACK Interceptor/Batman/DPaint II/NZ Story	359.00
Amiga 500 NEW PACK + Philips 8833 Stereo Colour Mon.	589.00
Commodore PC's	PHONE

PRINTERS

Xerox 4020 Colour Inkjet	1099.00
Citizen 1200 Parallel	129.95
Star LC-10 Parallel	159.00
Star LC-10 Colour Parallel	205.00
Star LC24-10 24 pin Multi-font 170/57cps	239.00
All Okimate 20 consumables normally in stock	PHONE

MONITORS

Commodore 1084S Colour Monitor inc lead	259.00
Philips 8833 Stereo Colour Monitor inc lead	239.00
Philips 7502 Green Screen Monitor	75.00

DISK DRIVES

AMDRIVE 30Mb External Disk Drive for A500	399.00
Amiga A590 Autoboot 20Mb Drive (RAM expandable)	395.00
Amiga A2092 20Mb PC Disk Drive	180.00
Amiga A2094 20Mb Amiga Disk Drive	359.00
Amiga Internal 3.5" Disk Drive	99.95
Microbotics A2000 Autoboot 32Mb Drive	499.95
Microbotics A2000 Autoboot 48Mb Drive	619.95
External 3.5" A500 Drive with disable switch	79.95

MISCELLANEOUS

RAM/Clock 512K Exp for A500	99.95
A2000 RAM 8Mb Populated with 2Mb	399.00
miniGEN low cost Genlock	113.85
Surge Protector 13A Plug/3-Way Adaptor	12.95/19.95
Surge Protector 4-Way Distrib Unit	15.95

SOFTWARE

Deluxe Paint III	79.95
Pro Video Plus	189.00
Digiview Gold	119.95
Kindwords 2	45.00
Home Office Kit: Kindwords 2, PageSetter 1.2, Maxiplan 1.9, InfoFile, CalcFonts	129.95
& Artists Choice	119.95
PageStream DTP	79.95
X-CAD Designer	99.00
Video Effects 3D	175.00
Music X	34.99
Midi Interface for above	

ALL PRICES ARE INCLUSIVE OF VAT AT 15%
CARRIAGE £5 (EXPRESS £10). Software and small items free.
Prices subject to change without notice

E&OE

Delta Pi Software Ltd

8 Ruswarp Lane, WHITBY, N. Yorks. YO2 1ND.
Tel: 0947 600065 (9am - 7pm)

PD SOFTWARE —

Free, Gratis, and Practically For Nothing

*Stuart Williams has a good old 'Nag' about
Quick-Base and Journal. Three practical programs.*

Looking for a good reason to persuade the boss (or your mum!) to let you buy an Amiga for serious home or office use? This month I look at three very practical programs from the George Thompson Services Public Domain and Shareware 'Home Business Pack'.

NAG

'Nag' is an electronic appointment calendar for the Amiga. In addition to keeping track of your appointments, your anniversary, and your mother-in-law's birthday, 'Nag' can be instructed to gently remind you by popping up a display of the next 'nagged event'. It will hang around flashing or beeping or playing a digital sample and/or using the Amiga's voice to 'NAG' (remind) you every 30 seconds until you respond. You can also turn the Nag off - unlike your mother-in-law!

***"You can set up the
program so that you will
be Nagged (reminded)
with Flash, Beep,
Sample, and/or
Voice."***

You can set up the program so that you will be Nagged (reminded) with Flash, Beep, Sample, and/or Voice. It allows you to set times, and types of nags for each individual event. NAG can play any file as SOUND data. It will set Period from an IFF format file.

Within the program itself, simple 'in-

tuitive' gadget-driven menus follow WORKBENCH conventions. In addition, a Configuration file sets up NAG to your preferences.

The program is surprisingly powerful, allowing setting of up to two years of 99 events per day. The buffer size is variable, from 2K bytes to 2 megabytes. NAG includes a very fast gadget-driven editor with COPY & RECALL facilities and 'Special Date' flags.

In use, the program is simplicity itself, particularly since a Calendar gadget quickly shows any day of any month of any year! It also features a comprehensive Print routine, enabling the production of assignment sheets, printout of a personal Diary, etc. Last, but not least, NAG includes a Search routine and a 'Missed Nags' routine, as well as a 'SingleShot' Nag Switch.

There is an extensive documentation file detailing how you may customise NAG to your requirements and complete its initial configuration. It is assumed that you have basic experience of using the CLI (Command Line Interface) of AmigaDOS.

For those of you who rely on your filofax and are heavily into time management, NAG could prove extremely useful. Like all appointment reminders, however, you will need to maintain a strict regimen of updating and consulting the program. If the first thing you do on entering your office is switch on your computer, why not let your Amiga NAG you for a while?

NAG Version 1.6 (c) 1987-1988, the ultimate Amiga reminder, is compatible with the Amiga A500, A1000 and A/

B2000 computers. It is Shareware, written by Richard Lee Stockton of Washington State, USA. The requested contribution is \$10.

QUICK-BASE

Quick-Base is a MailBase Management utility that allows you to define and maintain records of family, friends, businesses etc. that you correspond with. Think of it as a simple address book or Rolodex file which can be accessed without leaving your Amiga. Quick-Base allows a maximum of 200 records per file.

The program is multi-tasking, and appears on screen as a simple lined index card, known as the PAGE, listing the first line of each record in order that you may select records with the mouse

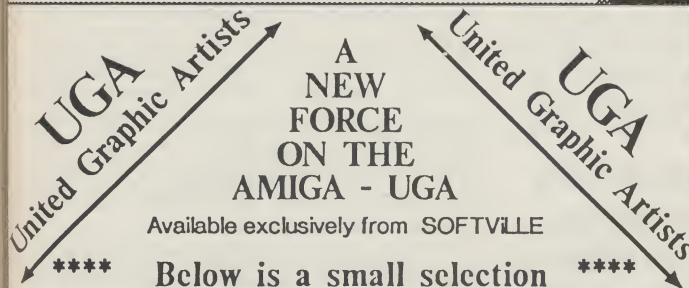
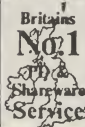
***"When the new Add
Record option is
selected, a window will
open over the PAGE.
Just key in the fields in
succession, and the
window will disappear."***

and manipulate them using the options accessed from the buttons on the right-hand side of the screen. Options are selected by moving the Mouse Pointer over the on-screen button you wish to select and pressing the left mouse button.

When the Add New Record option is selected, a window will open over the PAGE. Just key in the fields in succes-

PUBLIC DOMAIN LIBRARIES

All supply the same disks - don't they?



USON1 - 11 Sonix songs including DUELLING, ELECTRIC DREAM, WOLF of the DESERT.
 USON2 - 5 Sonix songs including NEVERENDING STORY, ROBOCO, FEEL THE RHYTHM
 USLID1 - 16 mostly high-res pictures arranged in a slideshow. Great tune plays along as they show!
 USLID4 - Slideshow from 'The Dark Lord', one of Europe's leading fantasy artists, brilliant
 USLID5 - Fabulous slideshow of 'Destination docklands' pictures + great tune plays along.
 UMUS3 - 10 great tunes includes SUBURBIA, GAME OVER, FUTURE TRIP, POWERFUL
 UMUS7 - Some of the best Amiga musicians wrote these for this disk, 9 great songs.
 UMUS12 - 'Future mirror soundisk', 8 great tunes included, great graphics, to amaze you!
 UMINT4 - 8 great demo's includes TEARDROPS, ANOTHER, MEGAPICTURE etc. etc.
 UMINT11 - 6 great demo's includes ROGER RABBIT, OVERLOAD, ACID DEMO, COOL
 UANIM2 - 2 animations, STAMP and UGA logo. Two of the very best you'll see on your Amiga.
 UANIM5 - 3 animations, HAPPY GUY, WINDOW and F15 MIRROR - incredible!
 USPEC1 - ZOUNDMONITOR plus others, now write your own great songs for your demo's!
 USPEC10 - THE MUSIC COMPOSER plus converters etc. Plus three Thunderbirds demo.
 USPEC11 - GAME MUSIC CREATOR plus others, brilliant program and utilities.

Ever wondered where to get those really unusual utilities from?

UTIL1 - BOOTEM, DBWIZARD, MASTER2, ICONLAB, SNIP-IT, BACKGR.MUSIC, CRUNCHER, SHOWFONTS, BOOTCONTROL, BOOTUNE, BOBEDITOR etc etc.
 UTIL4 - MODULE PLAYER, GRANDBOOT, MOUSEBACK, BOOTCOPY, BROWSER, POINTER ANIMATOR, FINDFILE, DE-ICONISER, MAKEPLAY, MAKECOPY etc
 UTIL7 - PLST CREATOR, BOOTLEG, BOOTUP, GETFAST, BOUNCEPIC, BOOTLOADER, SCROLLMAKER, BOOTCONTROL, SUPERVIEW, VIRUSHUNT, PRESETED etc.

If you want to know more about the BEST Send S.A.E (22p stamp) and state AMIGA for your FREE 60 page catalogue

DISK PRICES
 1 to 5 disks - £3.00 each
 6 to 10 disks - £2.75 each
 11 or more disks - £2.50 each
 Prices include Disk, 1st Class P&P, spare label.
 Mail and phone orders received before noon despatched same day, GUARANTEED
 Deduct £1 from above prices if sending your own blank disks

SOFTVILLE COLLECTION

We have collected the best from around the world and compiled them into our own collection, so good other libraries sell them as-is! Now over 400 disks - select from the BEST!

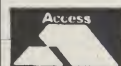
SO, YOU COLLECT DEMO'S DO YOU?

SOF214 - DEATSTAR MEGADEMO - Simply the BEST - 2disks - £5
 SOF254 - The WALKER demo, brilliant animation - 1meg version
 SOF255 - The WALKER2 demo, the legend continues - 1meg version.
 SOF206 - NORTHSTAR/FAIRLIGHT Megademo3 - 2disks - £5
 SOF205 - ROBO-COP demo, sampled from the smash hit movie!
 SOF260 - MUSIC MODULES for use with GHOSTWRITER (Uspec4)
 SOF267 - PHALANX BEATBOX - Loads of J.M.Jarre type songs!
 SOF274 - PHOENIX MEGADEMO1 - One of the best demo compilations get this for your collection now!
 SOF277 - SARGON MEGADEMO - Fabulous loading screen, love it!
 SOF278 - ALCATRAZ MEGADEMO3 - Brilliant selection!
 SOF308 - MAHONEY/KAKTUS music/demo disk with over 40! songs
 SOF318 - MADE IN HEAVEN from KYLIE MINOGUE - Very good sample and very popular now - 2disks - £5
 SOF327 - GOLDISK (EMI of Ivory) more great music how do they do it?
 SOF347 - QUADLITE MEGADEMO/JUKEBOX 64, very different!
 SOF352 - VISION MEGADEMO, some more brilliant graphics/music on this, their latest demo disk.
 SOF355 - IT WALKMAN MUSIC DISK, one of the very latest, and one of the very best around.

PLUS we have the largest collection of FRED FISH disks in the country, the latest sent to us monthly from the man himself. WE ALSO STOCK The F.A.U.G, SLIPPED DISK, PANORAMA, A.P.D.C collections and a selection from the AMICUS collection.
 So, if you want CHOICE and SERVICE, come to SOFTVILLE, BRITAINS NO.1 DISTRIBUTOR

SOFTVILLE

Unit 5, Stratfield Park, Elettra Ave, Waterlooville, Hants PO7 7XN. 24hr Orderline on 0705 266509 Fax 0705 251884



AMIGA USER INTERNATIONAL SUBSCRIBE!

You can keep up to date with everything that's happening on the AMIGA scene by taking out a subscription to Commodore AMIGA User International.

This new and unique international magazine is now published every month and will be mailed to you direct. Simply fill out the coupon for this special introductory offer, and send it to us now.

Please make cheques payable to: CROFTWARD LTD

To: Subscriptions Manager, AMIGA User International 120-126 Lavender Ave, Mitcham, Surrey CR4 3HP.

Please send me 12 issues of AMIGA User International

☐ Subscription rate U.K. £23.00

☐ Europe £32.00

☐ Outside Europe £46.00 Airmail

☐ Date subscription to commence

☐ Cheque enclosed

☐ Please debit my Access Card No.

Expiry date

Signature

Name

Address

County

Postcode

Telephone (home)

(business)

sion, and the window will disappear. If you wish to leave a field empty, just hit RETURN.

When Edit/View is selected, a window will again appear over the page, including all information in the selected record, or if none are selected, the first record on the page. Records are selected by simply moving the pointer over the name and pressing the left button. The selected name will be highlighted. This must be done before any options are selected.

When Delete Record is selected, a window will appear including the name of the selected record. Selecting OK deletes the record, No Way leaves it intact.

When Search String is selected, a window will appear including two strange-looking eyeballs. Key in the string you wish to look for. Only the first field in each record following the selected record will be searched. The final option is Quit/Exit, which speaks for itself! Page scrolling is selected by moving the Mouse Pointer over one of the arrows to the right of the page and pressing the left button. Large arrows scroll up or down one whole page (thirteen records), or small arrows a record at a time.

When the Printer icon is selected, a window opens including six things: three format options, a PRINT option, a CANCEL option, and a number. To print a list of all the records in a file, select the left-most format option and then PRINT.

To print mailing labels instead of a simple list, select the record for which you want labels made. Select Printer. Select the middle format option. Select

"While it is no Superbase or dBASE, Quick-Base is a neat little program that does a limited job well."

the number and key in the number of labels you want printed. Select PRINT. This works with standard sized tractor-fed labels.

The final format allows you to print a Phone List. To use this, you select the right-most format option and then PRINT. Similar easy to use options are supported to SAVE and LOAD your data files.

While it is no Superbase or dBASE, Quick-Base is a neat little program that does a limited job well. If you are forever reaching for an address book when writing letters, it could save you some time, and add to the usefulness of your computer.

Quick-Base is written by Kevin Harris of the USA, and is in the Public Domain.

JOURNAL

Journal provides a simplified approach for your financial record keeping requirements. You can use the system for a variety of purposes, such as keeping track of bank accounts, credit cards, accounts receivable, accounts payable, and income and expenses for your

"You may establish any number of accounts (limited only by disk space) and enter debit or credit transactions as they occur."

club. You may establish any number of accounts (limited only by disk space) and enter debit or credit transactions as they occur. As transactions are entered, a running balance is provided at the bottom of the screen. An option is provided that will allow you to print a statement for any given account.

An area in the middle of the screen is used for entering and viewing transactions. Along the right side of the screen are several orange gadgets that are used to perform various data entry and editing functions. If you position the pointer over the title bar and depress the right mouse button, you will see menu which will allow you to open, close, print and delete files. The HELP key may be depressed at any time to determine what your options are.

There are several primary menu functions:

Open Account - Before you enter transactions you must open an account. After selecting this option, you will be presented with a file requester that will allow you to specify the account name. If a database for the specified name already exists, the data will be read into memory. If a database for the specified name does not exist, one will be established.

Delete Account - Allows you to specify the name of the account to be deleted.

Print Statement - This option causes a statement to be printed for the account that is currently open.

Quit - Terminate the program.

Close No Save - If you select this option, the changes you have made to the account that is currently open will not be saved.

To use the on-screen gadgets, you simply position the pointer over the appropriate one and then depress the left mouse button. The functions that may be performed are as follows:

Top - Selecting this gadget will cause the top 19 lines of the transaction database to be displayed.

Insert - Selecting this gadget will allow you to insert additional transac-

tions.

Information that may be entered includes the date of the transaction in the form (MM/DD/YY); a description of the transaction; a reference field for any desired information such as a cheque or invoice number; debit amounts; and credit amounts. The change gadget will allow you to change a transaction. Selecting the delete gadget will cause the transaction at the location of the cursor to be deleted.

Use of the find gadget will allow you to search the database for the occurrence of any specified argument. The remove gadget will cause the transaction at the location of the cursor to be temporarily removed from the database. Likewise, the reinsert gadget will cause a removed transaction to be reinserted immediately above the current location of the cursor. The Remove/Reinsert options are used to move a transaction from one location to another within the database. Finally, the bottom gadget will cause the last 19 transactions in the database to be displayed.

"Journal is a simple but effective alternative to a spreadsheet, using methods that will be familiar to those who normally use a hardback book for small-scale accounts."

The proportional gadget at the extreme right of the screen may be used to scroll forward and backward a full screen at a time, using the mouse. The Up and Down Arrows may also be used to scroll forward and backward through the database.

Journal is a simple but effective alternative to a spreadsheet, using methods that will be familiar to those who normally use a hardback book for small-scale accounts. If you want to simplify your calculations without complicating your computing, it could be the program for you.

Journal is written by Hal Carter of Florida, USA, and is Shareware, with a suggested donation of \$15.

The G.T.S. Home Business Pack costs £19.99 including postage, and contains eight disks including a word-processor, spell checker, spreadsheet and more, in addition to the three programs reviewed here.

Overall, it represents remarkable value for the Amiga user wanting to use practical home or simple office applications without spending a fortune.

Contact: George Thompson Services, Dippen, Brodick, Arran, Scotland, KA27 8RN. Tel: (077082) 234. S.W.

MASTERPIECE

"THE BEST PICTURES I HAVE EVER SEEN ON THE AMIGA" reported a recent reviewer. This package takes you on a spectacular trip through the world of art. We have selected over 30 masterpieces from the world's art treasures and take you on a historical guided tour. Every picture is of true quality and is displayed using thousands of colours. To help you enjoy the world's heritage of art to the full we have included comprehensive notes on each artist and painting. All the famous names are there — Leonardo Da Vinci, Monet, Renoir, Constable, Picasso and many many more. Whether you are an art expert or know nothing at all about art, this is a wonderful way to appreciate the great paintings of the world (and appreciate the graphic capabilities of your Amiga as well). The package comes with two discs packed full of pictures and information.

Excellent value — £12.95.

GRID-IRON ACTION!

With the pictures of the same high quality as MASTERPIECE this package brings you fast-moving action pictures of American Pro Football. It introduces you to the teams of 1989/90, it looks back at past Superbowls and guides you through the jargon of Pro Football. This package provides the atmosphere, drama and excitement of the game in vivid colours. It is the perfect guide to this seasons Pro Football — Two discs packed full of information, facts, articles and pictures. If you like American football then this is for you! Only — £12.95.

BEGINNER'S GUIDE TO AMIGADOS

This is a new and effective way to take you from a beginner to an expert on AmigaDOS. This highly popular package has now been updated to cover BOTH 1.2 and 1.3 versions. The package consists of a guidebook, a tutorial DISC, a crib card and FREE additional software which could cost you over £20 to buy elsewhere. This is a clear and well thought out guide to AmigaDOS. It takes you by simple steps, with many examples through the powerful AmigaDOS commands. The emphasis is on learning through experience and doing — not just reading like most other books. It shows you how to set up your own boot disc with your own customised messages that will boot in seconds (unlike workbench!). It will show you how to make your Amiga independent of the workbench disc — no more "Please insert workbench disc". We include the new and incredibly fast Laser-Load picture loader so you can include your own pictures (e.g. from DPaint) on your boot up sequence. The disc also includes a gallery of high quality pictures. We supply a password system which will prevent unwanted users from using your Amiga. Also included are several other high quality programs. Guide book, Disc, Cribcard etc. only £12.95.

UK P&P — FREE and by FIRST CLASS post
Overseas orders welcome — Europeans please add 50p
Outside Europe please add £1.50 for airmail
All payments in pounds sterling please

Cheques/P.O.'s to:

**Wizard Software (Dept. M1), 20 Hadrian Drive,
Redhills, Exeter, Devon EX4 1SR**

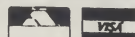


10 Petersfield Avenue, Slough, Berkshire SL2 5DN
Tel: 0753 35557 Fax: 0753 511122

Conditions of sale
— All prices exclude VAT and delivery charges
— E&OE all prices subject to change without notice
— Please add £1 + VAT for consumables and £8 + VAT for all other items for next day delivery

AMIGA HARDWARE	
A500 COMPLETE	279.00
A500 + TV MODULATOR	295.00
A500 + £200 WORTH OF GAMES + TV MODULATOR + JOYSTICK	305.00
INCLUDES: A500 + TV MODULATOR PHOTON PAINT	
TENSSTAR PACK (GAMES WORTH OVER £230)	
1084S MONITOR PACK	552.00
INCLUDES: A500 + TV MODULATOR 1084S COLOUR MONITOR	
PHOTON PAINT TENSSTAR PACK	
AMIGA ACCESSORIES	
AS01-512K RAM	113.00
FREE FITTING IF BOUGHT WITH AMIGA 500!	
AMIGA JOYSTICK	8.00
TV MODULATOR	19.00
MOUSE MAT	4.00
AMIGATO PHILIPS LEAD	8.00
AMIGATO PRINTER LEAD	10.00
DATAPLEX DRIVES	
1MB 3.5" EXTERNAL DRIVE	68.00
1MB 3.5" INTERNAL DRIVE	63.00
1MB 5.25" FLOPPY DRIVE	106.00
DATAPLEX HARD DRIVES	
20MB DRIVE A500/1000	478.00
30MB DRIVE A500/1000	529.00
60MB DRIVE A500/1000	910.00
PLEASE RING FOR OTHER CAPACITY DRIVES	
PHILIPS MONITORS	
CM8833 14" RGB/CVBS MON	189.00
SM7723 14" AMBER MONITOR	89.00
CM8852 HI-RES COL. MON	249.00
PRINTERS	
AMSTRAD DMP3160	105.00
AMSTRAD DMP32500	115.00
AMSTRAD LQ-3500D	195.00
AMSTRAD DMP4000	207.00
AMSTRAD LQ5000D	310.00
DOT MATRIX RANGE	
CITIZEN 1200	110.00
CITIZEN 180E	127.00
NEW 24PIN SWIFT 24	255.00
COLOUR UPGRADE FOR SWIFT	42.00
ALL CITIZEN PRINTERS COME WITH ONE YEAR WARRANTY	
EPSON LX400	145.00
EPSON FX850	299.00
EPSON FX1050	399.00
EPSON EX800	425.00
EPSON EX1000	581.00
EPSON LQ500	249.00
EPSON LQ550	265.00
EPSON LQ850	404.00
EPSON LQ1050	542.00
HEWLETT PACKARD	
THINKJET	265.00
QUIETJET	343.00
QUIETJET+	412.00
DESKJET	443.00
DESKJET+	535.00
PAINTJET	665.00
RUGGED WRITER	
ALL HEWLETT PACKARD PRINTERS COME WITH 12 MONTHS	
ONSITE WARRANTY	
STAR LC-10 MONO	135.00
STAR LC-10 COLOUR	175.00
STAR LC-24-10	225.00
STAR XB-24-10	409.00
STAR XB-24-15	540.00
SEIKOSHA SP180	105.00
9PIN 80 COLUMN 100 CPS F/T	
SEIKOSHA SP1200	119.00
9PIN 80 COLUMN 120CPS F/T	
SEIKOSHA SL80A	224.00
80 COLUMN 24 PIN NEC P2200	25.00
NEC P6-80 CHARACTER	414.00
NEC P7-136 CHARACTER	534.00
COLOUR UPGRADE KIT	80.00
PANASONIC KXP1081	128.00
PANASONIC KXP1124	249.00
SHEETFEEDER	89.00
PANASONIC KXP1180	149.00
PANASONIC KXP1592	253.00
PANASONIC KXP1595	344.00
PANASONIC KXP1540	428.00
NEW MANHESMANN TALLY	
LAUNCH OFFER	
MT81 (DOT MATRIX)	110.00
SHEETFEEDER	62.00
SERIAL I/F	62.00
RIBBONS	
KXP1081/1090/1124	4.00
DMP 2000/3000/3160	2.80
DMP 4000	4.40
PCW8256/LQ3500	4.50
PANASONIC 3131/MP26	4.40
LX800/RX/MPX/XB	3.15
FX1000/FX/RX100	4.40
NL 10	4.40
LQ500/800/850	4.40
LC-10	4.40
NEC	5.00
VARIOUS SELECTION IN STOCK	
PLEASE CALL FOR PRICES	
DISKS	
BRANDED SONY/KODAK ETC.	
BOX 3.5" DD/DS 135TPI	17.00
BOX 5.25" DD/DS 96TPI	15.00
MAXELL CF23 DISKS	22.00
ANTISURGE PLUGS	
SINGLE SOCKET	12.00
4 WAY/SURGE GANG	18.00
WITH LEAD	
DUST COVERS	
PC DUST COVERS	15.00
PCW DUST COVERS	15.00
PRINTER DUST COVERS	6.50

PROFESSIONAL REPAIRS CARRIED OUT



TEL: 0983 79496



ACCOUNTS	
Desk Top Budget	49.91
Home Accounts	23.92
Panmead Accounts Modules	41.40
Small Bus. Acc. Cash 1MB	59.80
Small Bus. Acc. Xtra 1MB	99.82
COMMUNICATIONS	
A Talk 3	61.87
BBS PC	88.78
K Comm 2	Query
Ruby Comm (View/Term)	68.77
DATABASE MANAGERS	
Acquisition V1.3	159.85
Data Retrieve Professional	160.77
DB Man (DBase Compatible)	109.94
Form Master (horses)	40.02
K Data	35.88
Mailshot Plus	37.95
Microbase	17.94
Microfiche Filer	58.88
Microfiche Filer Plus	117.76
Protect Data	Query
Superbase Personal	44.85
Superbase Professional	164.91
DESKTOP PUBLISHERS	
City Desk V2.0 1MB	Query
Page Setter 1MB	56.81
Pagestream 1MB	Query
Professional Page 1MB	189.98
EDITORS	
Cygnus Ed Professional	59.80
GRAPHICS	
Animagic Editor 1MB	64.86
C Light Ray Tracing	44.85
Comic Setter 1MB	59.80
Deluxe Paint II 1MB	60.95
Deluxe Photolab 1MB	49.91
Deluxe Video	54.97
Digi Paint 3	49.91
Movie Setter	55.89
Photon Paint II 1MB	61.87
Pixmate Image Tools	38.87
Sculpt 4D Animate Junior	89.93
The Director	39.79
Turbo Silver Ray Tracing	99.82
Zoetrope 1MB	79.81
HARDWARE	
512K A500 RAM Expansion	99.82
AMAS Midi System	77.74
A590 20MB Hard Disk	369.84
Casio MT240 MIDI Keyboard	139.84
Digi View Gold Digitiser	109.94
Flat Bed Scanner	459.77
Gomf. The Button	54.97
MIDI Master Interface	34.96
Minigen Genlock	99.82
NEC 3.5" Drive/Switch	78.89
ProSound Designer Gold	69.92
Star LC10 Colour + Cable	214.82
Star LC10 + Cable	169.97
Star LC15 + Cable	319.93
Star LC24-10 + Cable	249.78
Star LC24-15 + Cable	389.85
Vortex 40MB Hard Disk	529.92
PACKAGES	
Home Office Kit	129.95
Graphics Starter Kit	59.80
Publishers Choice	69.92
Starter Kit	59.95
The Works	72.45
The Works Platinum	159.85
PROGRAMMING	
Active C Developer	139.84
Devpac 2	44.85
Hisoft Basic	58.88
Lattice C5	174.80
Modula 2 Standard	77.78
Talespin Advn Creator 1MB	24.84
True Basic	53.82
SOUND	
Deluxe Music Const. Set	49.91
Instant Music	22.77
Music X (UK Version)	179.86
Studio Magic	48.76
SPREADSHEETS	
Digicalc	30.36
PlanIT	Query
Superplan	69.92
VIP Professional (123 Clone)	73.37
UTILITIES	
Amigados Toolbox	39.79
Amigados Express	24.84
Amikit For Beginners	29.90
Arenx Language	Query
B.A.D. Disk Optimiser	31.97
BBC Emulator	39.33
Calligra Fonts; Newsletter	24.84
Disk Master Housekeeper	38.80
DOS 2 DOS File Transfer	29.90
Enhancer 1.3 S/W Upgrade	14.72
Face 2 Disk Cache	23.92
Gomf 3 Guru Interceptor	27.83
Maxidesk Workbench Util.	55.12
Project D Backup/Editor	30.82
Quarterback H/D Backup	44.85
Superback H/D Backup	39.79
Virus Infection Protection	34.96
Wordperfect Library	88.09
X Copy 2 Backup & Editor	17.94
Your Family Tree	39.79
WORDPROCESSORS	
Kindwords 2	36.80
Microtext	17.94
Outline Ideas Organiser	35.88
Protect	69.00
Transcript	32.89
Wordperfect	159.85
Write & File 1MB	69.69

Richard Howe & Angela Hammett

Applied Research Kernel

Corve Farmhouse, Chale Green, Ventnor, PO38 2LA, U.K.

POSTAGE: UK Free. S/W to Europe £4/Item, to World £10/Item.

COMPANY: Amiga/QL specialists, established 3 years

CHEQUES: London Sterling Payable to A.R.K. please

V.A.T.: All prices include U.K. V.A.T. at 15%

EXPORT: Remove U.K. V.A.T. (= price/1.15)

DESPATCH: Usually within 48 hours

PRICES: Are subject to change

QUICK ACCESS TO OVER 1500 AMIGA PRODUCTS

CITIZEN HQP-40
S REVIEWED AUI SEPTEMBER 89

SUPERB
24pin LQ PRINTER
inc **FREE** COLOUR KIT (worth £57.50)
FREE 2 YEAR WARRANTY

£399.00 inc. V.A.T.
CARRIAGE £5.00

Epson LQ Emulation
Draft: 200 cps; LQ: 66 cps;
24KB Data Buffer;
Parallel & RS232

FREE 2 YEAR WARRANTY

FREE 10 STAR PACK • FREE PHOTON PAINT •

AMIGA 500
£359.00 inc V.A.T.
CARRIAGE £5.00

THESE OFFERS AVAILABLE ONLY WHILE STOCKS LAST E&OE

CMS CROFTON MICRO SUPPLIES
FREEPOST (NO STAMP REQUIRED) **01-469**
BROCKLEY, LONDON SE4 2BR **3246**

WIN

50 SONMAX JOYSTICKS

PLUS...

10 F-16 COMBAT PILOTS!

Is your stick past its best? Are its buttons burnt-put, and its shaft a flaccid shadow of its former self? Sounds like you need a brand spanking new Sonmax Super Professional! In our tests, the Super Professional clocked lap records in *The Games: Summer Edition*, tracked down, and beat, seven shades of excrement out of *The Beast*, and sent the Xenites packing with their slimy tails between their legs. Here's the best bit: Sonmax have given us fifty of these classic sticks to give away to you lot! Yes, a whole

half-century just waiting to be claimed!

As if that wasn't enough, Digital Integration are giving away ten copies of their superb F-16 Combat Pilot, reviewed in this very issue. So, the first ten correct entries will receive both a copy of F-16 Combat Pilot and a Super Professional! The remaining forty sticks will go to the following lucky winners to be pulled from the hat. Just answer the questions below, and get them off to us without delay.

1. Name any other flight simulation from Digital Integration.
2. Does HUD stand for:
 - a) Heavenly Underwear Design?
 - b) Height Utility Data?
 - c) Head Up Display?
3. Do the fire buttons on the Super Professional resemble:
 - a) Polos?
 - b) Spangles?
 - c) Extra Strong Mints?
4. Does the Super Professional use:
 - a) Microswitches?
 - b) Leaf switches?
 - c) Blister switches?

Answers on a postcard to:

DI/Sonmax Comp · Amiga User International
40 Bowling Green Lane · London EC1R 0NE

The missing link for
professional Amiga users?

ETHERNET

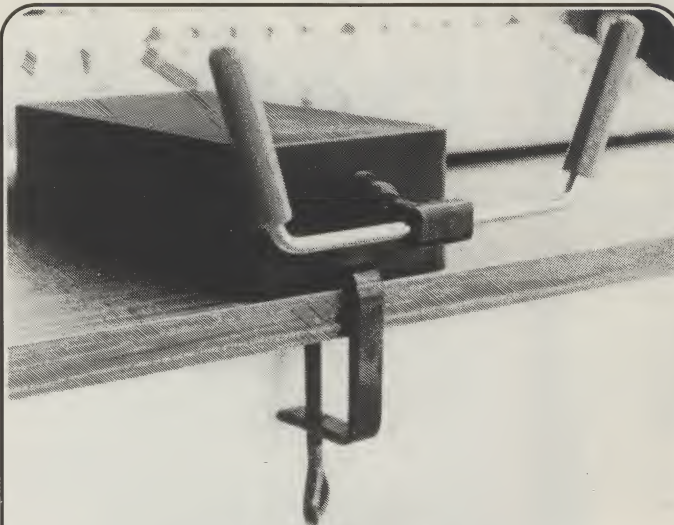
DMA network cards now
available from

PAGEPLAY LIMITED

2-3 Fitzroy Mews
London W1P 5DQ

£395.99 + VAT

01 387 4040



DELTABASE A YOKE STYLE JOYSTICK FOR FLIGHT SIMULATOR II

DELTABASE A Flight Simulator joystick £29.95

FLIGHT SIMULATOR II £24.95

VOLTMACE

Unit 9, Bondor Business Centre
London Road, Baldock, SG7 6HP

Telephone 0462 894410



Prices include VAT & 1st class post
Dealer & Distributor terms available



TELE-TEXT

A world of information
at your fingertips



The Microtext Adaptor turns your Amiga into an advanced Teletext TV giving you fast access to any of the free pages from Ceefax or Oracle. Hundreds of pages constantly updated to give you the very latest information, at the touch of a button.

The mouse may be used to select any page then print it or save it to disc. Saves may be compact or IFF, it can read out the news and is easily programmed to do all these things automatically. With true 'FastText', the system knows what pages are likely to be selected next and gets them in advance making them available instantly. Many more facilities are also provided. The Adaptor connects to the Parallel port, your printer is then reconnected to a socket on the Adaptor and when the computer is not in use you can watch TV on the monitor!

A review in the June '88 AUI concluded: "The hardware is well built, it has excellent software and is well documented."

At only £124.80 + VAT for an advanced Teletext TV, its excellent value for money. VHF/UHF International version for New Zealand, Australia and Europe (except France) £169.50



MICROTEXT



Dept. AM, 7 Birdlip Close, Horndean, Hants PO8 9PW
Telephone: (0705) 595694

MIDI-X2

THE MUSICAL INSTRUMENTS DIGITAL INTERFACE



MIDI-X2 is an interface that you need to link, your MIDI-equipped musical instruments and controllers, to your AMIGA. It is compatible with all music softwares that recognizes MIDI. Though it is designed for the AMIGA 500/2000 computers, it can also be interfaced with the AMIGA 1000, by using just a jumper-type gender changer without added electronic components.

Since the MIDI-X2 utilizes the AMIGA's serial port, it is therefore still possible to connect any other serial devices such as a printer, by connecting the device to the 'pass thru' on your MIDI-X2. This special feature will be useful and convenient, when you need to print a score or sequencer data in the midst of your music work.

To handle the MIDI data more efficiently, we have employed a digital opto-isolator in the MIDI-X2, rather than the conventional analog one like most other MIDIs with similar features. We believe that MIDI-X2 will give you a better link to your music.

DIGITAL-X (AUSTRALIA)

LEVEL 67, MLC CENTRE, MARTIN PLACE, SYDNEY, NSW, 2000
TELEFAX NO. (02)221 1987, TELEX NO. AA 72566

THE GREAT COVER UP!



It has a special mouse pocket and the whole cover fits snugly over the complete Amiga 500 computer, giving it extra protection to help keep it in good working condition.

Commodore Amiga User International
40 Bowling Green Lane, London EC1R 0NE

[illegible]

Expiry date

Address

Please allow 28 days for delivery.

ONLY
£7.99
incl. P&P

Comprehensive and fully integrated design, construction, graphics and installing of displays and exhibitions, including pack mock-ups for all display and photographic purposes.

Design and Exhibition
TECHNIQUES

Design and Exhibition TECHNIQUES



"THE TRADE-IN POST"

AMIGA 2000 4.6 BUNDLE
LATEST REV. BOARD, 1084 MONITOR, AT
BRIDGEBOARD (WITH 1 Mb RAM AND 5.25" 1.2 Mb
DISC DRIVE), 20 Mb AUTO BOOT AMIGA HARD DRIVE,
1.3 ROM & SOFTWARE, MOUSE & KEYBOARD.
ONLY £1998.00 + VAT

AS ABOVE BUT WITH A 40 Mb AUTOBOOT HARD DRIVE
..... £2225.00 + VAT

AS ABOVE BUT WITH A 40 Mb AUTOBOOT HARD DRIVE
£2225.00 + VAT

(FURTHER REDUCTIONS AVAILABLE FOR ORDERS FROM GOVERNMENT AND EDUCATIONAL BUYERS, ONLY UNTIL OCTOBER 15TH 1989)

IF THIS BUNDLE ISN'T TO YOUR LIKING PLEASE RING 01-304 2631. ASK FOR KEITH MCGOVERN AND HE WILL PRICE A PACKAGE TO YOUR OWN SPECIFICATION AND/OR REQUIREMENTS. OR FAX US ON 01-304 7214.

AMIGA 2000 MEMORY BOARD BUNDLE
MICROBOTICS 8-UP RAM BOARD WITH 2 Mb RAM FOR
ONLY £349.00 INC
2 Mb ADDITIONAL RAM (WHEN BOUGHT WITH BOARD)
..... £189.00 INC

AMIGA 2000 HARD DRIVE BUNDLE
MICROBOTICS AUTOBOOT HARDFRAME SCSI
INTERFACE CARD WITH SEAGATE 49 Mb SCSI 3.5"
DRIVE FOR ONLY **£499.00 INC.**

AS ABOVE WITH 32 Mb SEAGATE.
ONLY £469.00 INC.

AMIGA DTP BUNDLE
PROFESSIONAL PAGE + RICOH POSTSCRIPT LASER
PRINTER £2159.00 + VAT

OR WITH AMIGA 2000 & 1084 MONITOR £3289.00 + VAT

PIXELSCRIPT
PRINT POSTSCRIPT FILES ON YOUR PREFERENCES
PRINTER £99.95 INC.

AMIGA A500 + MODULATOR, MOUSE & TEN DISKS
£345.00

A590 HARD DRIVE + 2 Mb RAM	£649.00
CUMANA 354 DRIVE WITH SWITCH	£95.00

SOFTWARE ETC.	
DIGIME GOLD DIGITISER	£119.00
DIGI-DROID	£54.95
HITACHI CAMERA WITH ADJ. LENS	£229.00
STAND AND LIGHTS	FROM £49.95
PROFESSIONAL PAGE 1.2	£189.95
PRO PAGE TEMPLATES	£35.95
PRO PAGE CLIP ART	£35.95
PAGE RENDER 3D - ARTISTS 3D TOOL	99.95
MUSIC X - BRILLIANT!!	£179.00
DIGIPANT 3	£54.50
B.A.D.	£30.00
QUARTERBACK	£35.95

SUPERBASE/SUPERPLAN BUNDLES
SUPERBASE 2 & SUPERPLAN
 (DATABASE/SPREADSHEET) **£74.95**
SUPERBASE PROFESSIONAL & SUPERPLAN ... **£179.95**

X-COPY II
THE LATEST COPY OF THIS POWERFUL BACKUP UTILITY

..... \$19.95

HARDWARE UPGRADE FOR X-COPY II (FOR REGISTERED
USERS) \$15.00

X-COPY II WITH HARDWARE INTERFACE (NEEDS TWO
DRIVES) \$29.95

PLEASE NOTE - X-COPY II IS ONLY SOLD AS A BACKUP
UTILITY AND NOT FOR ANY UNLAWFUL PURPOSES. IT
WILL NOT PRODUCE COPYABLE DISKS.

PART EXCHANGE – WE ARE PART EXCHANGE SPECIALISTS. FOR A REALISTIC QUOTE PLEASE RING. WE ALSO BUY EQUIPMENT FOR CASH.

WE WELCOME OFFICIAL ORDERS FROM SCHOOLS, UNIVERSITIES, HOSPITALS, MEDICAL SCHOOLS AND GOVERNMENT DEPARTMENTS. QUANTITY DISCOUNTS ALWAYS AVAILABLE AND EXPORT ENQUIRIES ARE DEALT WITH SPEEDILY. ALL PRICES INCLUDE VAT AT 15%. CARRIAGE EXTRA ON HARDWARE. ASK FOR QUOTE.

Write to: 59 SWANLEY ROAD, WELLING, KENT DA16 1LL. or 'PHONE: 01-304 2631
Cheques to AMTEN LIMITED

Callers welcome but please 'phone first We are open Mon-Sat 9am - 10pm



NOTEPAD

ELECTRIC P.D.

P.D. DISK £2.50 EACH OR £18.00 FOR 10

WRITE OR PHONE FOR YOUR FREE PRICE LIST

STARTER PACK

HORROR DEMO

PET SHOP BOYS

SAM FOX DEMO

FOR ONLY

£5.00

ELECTRIC P.D. PACKS

EPD1, SABRINA, EVERY INCH A LADY*£5.00
EPD2, POP MUSIC DEMO, TIFFANY.....£5.00
EPD3, ANIMATIONS 1,2£5.00
EPD4, CAT WALK, THE JUGGLER£5.00
EPD5, SONIX JUKEBOX 9,10,11£7.50
EPD6, ALL 4 DELIRIOUS DISKS**£9.00

* 15 AND OVER ** 18 AND OVER

ALL PRICES INC VAT AND P&P BY FIRST CLASS POSTIN
THE UK OUTSIDE UK PLEASE ADD £3.00 PER 5 DISKS

SEND CHEQUES/POSTAL ORDERS TO

ELECTRIC P.D., 7 PARK ROAD

HALTWHISTLE, NORTHUMBERLAND

NE49 9AR, PHONE: (0434) 32194 24 HOURS.

MAKE YOUR AMIGA EARN!

Yes, making money with your Amiga becomes incidental when you know how. Your micro is, if only you knew it, a gold mine. The size and make is irrelevant. Make the initial effort. NOW by starting your own HOME BASED BUSINESS.

This may be the most important move you will ever make!

REMEMBER: You'll never get rich by digging someone else's "ditch". Anyone in the country, including YOU, can become very rich in a relatively short period of time just by doing a few basic things! It's more rewarding than playing games. The benefits are many and varied. Full or part-time. For FREE details send S.A.E. to:

**HOME BASED
BUSINESS**

31 PILTON PLACE (AUI 5)

KING AND QUEEN STREET

WALWORTH, LONDON SE17 1DR



COTSWOLD COMPUTERS

SPECIAL OFFER Amiga 500 Limited Edition (1 megabyte

RAM, TV modulator + Dragons Lair) £539.00

Amiga 500 inc modulator and one game..... £374.00

Amiga 500 inc modulator and 10 star games pack..... £389.00

Amiga 500 + 1084S monitor £634.00

CBM PC1 IBM compatible + ABLE 1 software, mono £357.20

CBM PC1 IBM compatible + ABLE 1 software, colour.... £489.50

CBM PC 40 III single drive + colour VTA + 40 megabyte

hard disk £2137.00

Atari STFM Explorer pack £299.00

(All prices inc VAT)

All other computers and peripherals available; also software.

For further details phone or send sae to:

COTSWOLD COMPUTERS,

22 Polruan Place, Fishermead,

Milton Keynes MK6 2LH

(0908) 662331



COMMODORE DIAGNOSTICIAN II®



The Commodore DIAGNOSTICIAN II is a newly revised or updated version of the Commodore Diagnostician which sold over 10,000 worldwide. The "DIAGNOSTICIAN II"

LOCATES FAULTY CHIPS on ALL Commodore computers and 1541 floppy drives. This diagnosing is done via a sophisticated cross reference or grid arrangement with over 95 per cent success. The new version, (just out), has over 30 changes and includes diagnoses for the new "combination chips" and new "64" boards just released.

Fantastic full page review in March 1988 (U.S.) "Computer Shopper Magazine".

PRICE IS £5.25 inc. postage

MIDLAND COMPUTER REPAIR SERVICES

UNIT 1, THE OLD DAIRY, NORTH STREET, MELTON MOWBRAY,
LEICS LE13 1NL TELEPHONE (0664) 410148

WESTONING LTD

3 1/2" DS/DD

	25	50	100	200	400	600
720k	£17	£31	£55	£105	£205	£305
880k	£18	£33	£63	£120	£235	£345

Including Labels

5 1/4" DS/DD

	25	50	100
	£7	£12	£22

Including Stickers & Labels

Disks certified 100% Error Free

DISK BOXES

Hinged Lid, Lockable
3 1/2" or 5 1/4"
Capacity 50 100
£3.25 £5.75

Add £2 P&P if not ordered
with disks

Prices Include
VAT & Carriage

VISA

MasterCard

3 1/2" Disk Labels

100 1000
£2.50 £10

State either coloured or
white tractor feed



WESTONING LTD Dept. A.U.

12, Sanderson Road, Westoning,

Bedford MK45 5JY

Tel: (0836) 775060 (0525) 718668

E · M · S

THE REPAIR SPECIALIST

A500 A1000 A2000

PERIPHERALS & ACCESSORIES

CALL FOR PRICE OR QUOTE

0778 36752

ELECTRONIC MAINTENANCE SERVICES
12 KINGS STREET INDUSTRIAL ESTATE,
LANGTOFT, PETERBOROUGH PE6 9NF

ELECTRIC P.D.

P.D. DISK £2.50 EACH OR £18.00 FOR 10
WRITE OR PHONE FOR YOUR FREE PRICE LIST

STARTER PACK

HORROR DEMO
PET SHOP BOYS
SAM FOX DEMO
FOR ONLY

£5.00

ELECTRIC P.D. PACKS

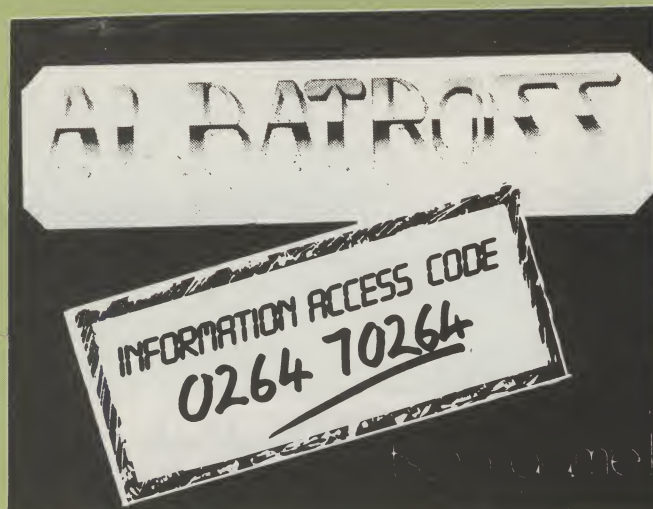
EPD1, SABRINA, EVERY INCH A LADY*£5.00
EPD2, POP MUSIC DEMO, TIFFANY£5.00
EPD3, ANIMATIONS 1,2£5.00
EPD4, CAT WALK, THE JUGGLER£5.00
EPD5, SONIX JUKEBOX 9,10,11£7.50
EPD6, ALL 4 DELIRIOUS DISKS*£9.00

* 15 AND OVER ** 18 AND OVER

ALL PRICES INC VAT AND P&P BY FIRST CLASS POST IN
THE UK OUTSIDE UK PLEASE ADD £3.00 PER 5 DISKS

SEND CHEQUES/POSTAL ORDERS TO

ELECTRIC P.D., 7 PARK ROAD
HALTWHISTLE, NORTHUMBERLAND
NE49 9AR, PHONE: (0434) 32194 24 HOURS.



We all know the Amiga is the best.
Want to make it even better?

Use *FastMenu*.

It will replace the menus of **any** program with a set of
fast, easy to use gadgets.

For only 3900 ptas. (aprox. £20)

Send cheques/P.O. to:

Software dep.
OMINA ELECTRONICS S.A.
Via Augusta 99
08006 Barcelona
SPAIN

Customer service:

3-217 1817
Mon.-Fri. 16:00 – 20:00 CET

**VISA ACCEPTED ONLY
ON SIGNED ORDERS**

To Book This Space

Phone Nichola

on

01-278 0333

Extension 252

SPA COMPUTER CENTRE

AUTHORISED AMIGA 2000 DEALER

*WIDEST SELECTION OF GAMES IN THE
MIDLANDS AND WARWICKSHIRE*

VAST RANGE OF PERIPHERALS, BOOKS,
HARDWARE AND SOFTWARE FOR
ALL MAKES OF COMPUTERS

*10% OFF ALL GAMES WHEN
PURCHASED WITH THIS ADVERT*

SPA COMPUTER CENTRE
68 CLARENDON STREET
ROYAL LEAMINGTON SPA
TEL (0926) 337648
FAX (0926) 425985



AMIGA A500

Lowest prices in the UK
From £330 inc (UK Spec)

Call for details:
0705 511439

**ATHENE COMPUTERS
DEPT AUI,
16 STOKE ROAD, GOSPORT,
HAMPSHIRE PO12 1JB**

COMPUTER REPAIRS

ATARI ST/AMIGA

Simply send your machine along
with a £15 diagnostic fee and
you will be sent a written
quotation for the cost of
repairing your machine.



★ TYPICALLY £45, 1 WEEK TURNAROUND ★

**W.T.S. ELECTRONICS LTD, CHAUL END LANE, LUTON, BEDS, LU4 8EZ
0582 491949 (4 LINES)**

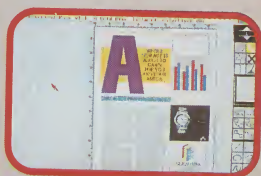
FIRST AID
FOR
TECHNOLOGY



GOLD DISK have proven they have the products to let you get the best from your Amiga. ■

For the beginner or the professional – word processing, spreadsheet & desk top publishing. ■

For details on these and other new GOLD DISK products, contact your nearest dealer or HB Marketing on the number below.



Professional Page

THE desktop publishing package, voted "best buy" over Pagemaker & Ventura, see our separate ad on Version 1.3. For those of you who need a helping hand with page layout ask for **TEMPLATES**, another Gold Product. ■



Comic Setter

THE pictorial DTP package. Whether it be comic layout, story boarding or training sheets, Comic Setter is ideal for creating a pictorial image of the ideas you want to convey. ■



Professional Draw

THE vector drawing package. Full set of drawing tools, import bitmap & trace, rescale, rotate/distort. Magnify 25% – 1600% Combine structured & bitmap images. Print to dot matrix or postscript. Colour sep's, registration & crop marks. ■



Structured Clip Art

THE set of vector based (structured) drawings suitable for use with Pro. Page & Pro. Draw. Colour or 16 shades of grey and NO "jaggies". Print out to dot matrix, inkjet, LaserJet or Postscript devices. Includes a utility to convert the drawings to bitmap for use in your favourite packages. ■



Advantage

★★ **NEW** ★★
THE most powerful integrated Amiga spreadsheet: 65,000 x 65,000 cells, unlimited worksheets/graphs, 16 colours on charts, sideways printing, 90 functions, AREXX support, online support for Transcript. Works in 512k. ■



Desktop Budget

THE simple home accounting package. Track your accounts, print cheques, reconcile bank statements & manipulate several kinds of reports. An intuitive icon based interface, it outsells, all other North American Amiga finance programs 2 to 1. ■



Moviesetter

THE 2D animation package that includes a set editor (a drawing package that lets you draw & experiment with sequences of character movement), moving background, single shotting, sound insertion, multiple character animations, storyboard & clipboard functions. ■



Transcript

THE easy to use word processor. Incredibly fast, includes a 90,000 word dictionary, auto-index, mail merge and direct on-line support for Advantage & Professional Page. ■

Variable Dither -
Computed internally at 30 bits per pixel (over one billion colors). Gives you over 100,000 apparent colors on screen.

Unmatched.

Super BitMaps with Auto-Scrolling - Real-time scrolling on up to 1024 pixels high or wide image with full overscan display.

Sophisticated.

Flexible Text Rendering -
Allows for anti-aliased fonts, Rainbow Fonts and Transparent Fonts and more.

Flexible.

Colorize - Play Ted Turner and add color to black-and-white images or change colors on already colored images.

Remarkable.

User-Controllable Transparency - Allows real time control of the amount of transparency and the location of the light source.

Powerful.

Texture Mapping with Anti-Aliasing - Gives you super-fast warping and stretching of any image.

Unlimited.

Transfer 24 - Digi-Paint 3 comes with Transfer 24 image processing software to give you support of all Amiga resolution modes and the same advanced image processing found with NewTek's best-selling Digi-View Gold Video Digitizer.

Intuitive.

100% Assembly Language - Makes Digi-Paint 3 the fastest HAM paint program ever!

The Ultimate Paint Program:

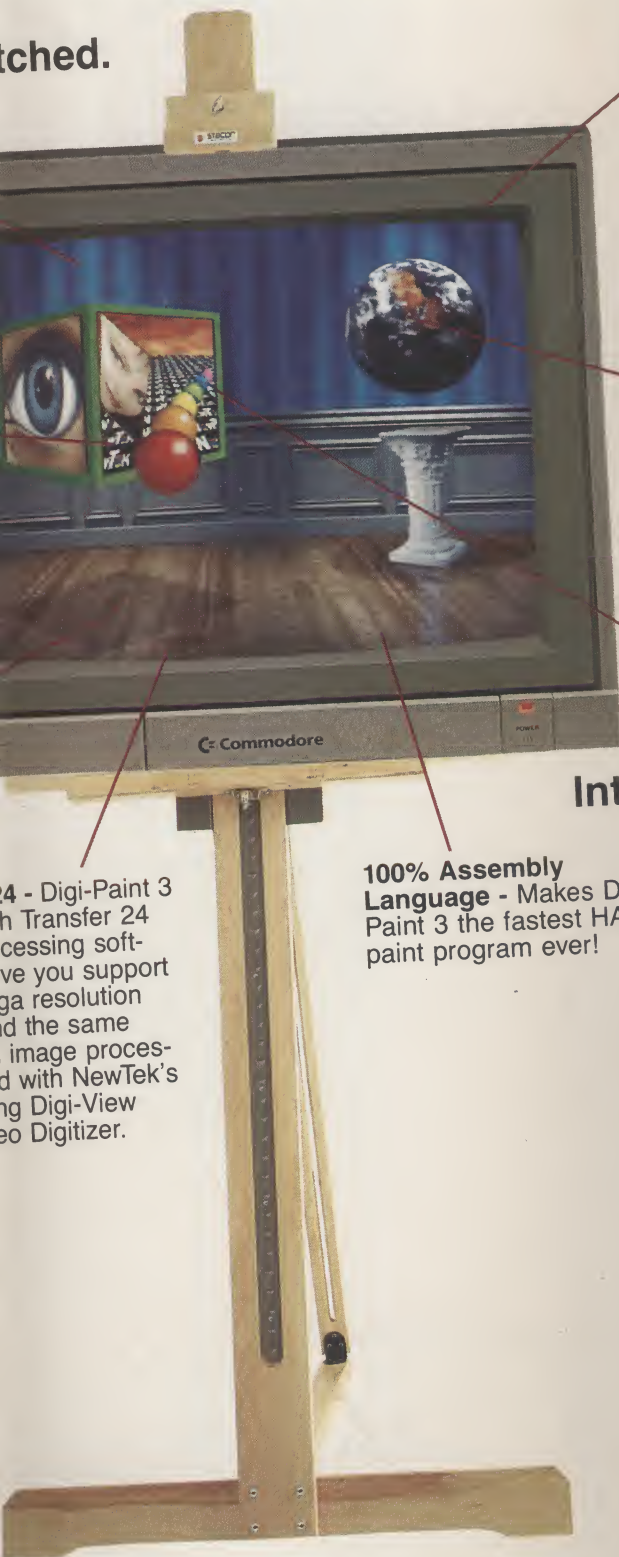
DIGI·PAINT[™] 3

For more information call NewTek at 0101-913-354-1146

Digi-Paint 3, Digi-View Gold and Transfer 24 are trademarks of NewTek Inc.

NewTek
INCORPORATED

atched.



Super BitMaps with Auto-Scrolling - Real-time scrolling on up to 1024 pixels high or wide image with full overscan display.

Flexible.

Colorize - Play Ted Turner and add color to black-and-white images or change colors on already colored images.

Powerful.

Texture Mapping with Anti-Aliasing - Gives you super-fast warping and stretching of any image.

Intuitive.

100% Assembly Language - Makes Digi-Paint 3 the fastest HAM paint program ever!

4 - Digi-Paint 3
h Transfer 24
cessing soft-
ve you support
ga resolution
d the same
image proces-
d with NewTek's
ng Digi-View
eo Digitizer.

Ultimate Paint Program: **DIGI·PAINT™ 3**

For more information call NewTek at 0101-913-354-1146

Digi-Paint 3, Digi-View Gold and Transfer 24 are trademarks of NewTek Inc.

NewTek
INCORPORATED

COMMODORE AMIGA USER INTERNATIONAL — NOVEMBER 1989

AMIGA

INTER

THE AMIGA IN ACTION!

**AT THE PC SHOW ...
ON THE NETWORK ...
ARPING ON ...
BUILDING MODELS ...
USING ITS INTUITION ...
SPEAKING LANGUAGES ...
ACCESSING THE HARDWARE
CREATING ART AND
SCANNING HEARTS ...**

AND MASSIVELY INTO GAMES

**XENON II, SHADOW OF THE B...
THE GAMES SUMMER EDITION
ASTRAROTH, OOZE, PASSING
POPULOUS - THE PROMISED L...
AND MANY, MANY MORE.**

WIN
50 \$
PROFE
ZIPSTICK
COMBA